L 4386-66
ACC NR: AP5017909

SUBMITTED: 31Dec64 ENCL: 00 SUB CODE: OP

NR REF SOV: 001 OTHER: 005

Card 2/2

SHENYAVSKAYA, Ye.A.; GURVICH, L.W.; MAL'TSEV, A.A.

Electronic spectrum of the molecule IaF. Vest. Mosk. un. Ser. 2:Khim. 20 no.4:10-13 Jl-Ag '65. (MIRA 18:10)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

GURVICH, L.V., kand.khim.nauk

Symposium on the thermodynamics of nuclear materials held in Vienna. Vest. AN SSSR 35 no.12:74 D '65.

(MIRA 19:1)

L 62770-66 EWT(l)/EWT(m)/EWP(j)/T IJP(c) WW/JW/AT/WE/RM

ACC NR: AP6029776 SOURCE CODE: UR/0294/66/004/004/0507/0512

AUTHOR: Yungman, V. S., Gurvich, L. V., Rtishcheva, N. P. 8 B

ORG: High Temperature Scientific Research Institute (Nauchno-issledovatel'skiy institut vysokikh temperatur)

TITLE: Composition and thermodynamic properties of products of methane combustion with ionizing additives

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 4, 1966, 507-512

TOPIC TAGS: combustion, methane, plasma, combustion product, combustion catalyst, THERMODYNAMIC PROPERTY, CHEMICAL COMPOSITION

ABSTRACT: The thermodynamic properties and the equilibrium composition of a low-temperature plasma consisting of the products of methane combustion in air in the presence of an ionizing additive (K_2CO_3) have been calculated on a computer for a wide range of temperatures (1000—4000K) and pressures (0.2—100 atm). The problem of determining the equilibrium composition (partial pressures of mixture components) of a homogeneous chemically reacting plasma of the composition C-H-O-N-K-Ar at constant total pressure in the ideal-gas approximation, amounted to the solution of a system of nonlinear equations. This system included chemical equilibrium-constant

Card 1/2 UDC: 662.613:547.211+546.32

L 46250-66

ACC NR: AP6029776

O

equations, material-balance equations describing the elemental chemical composition of the plasma, a Dalton's law equation for the constant total pressure, and an equation describing the electrical quasi-neutrality of the plasma. The cores considered were those of the combustion of methane in air of normal composition, in air enriched in oxygent (to 30—40% O_2), and in air enriched in nitrogen (to 81.08% N_2) (a case approximating the combustion of natural gas), with or without K_2CO_3 additive (1% on a K basis), at oxidant excess factors of 0.9,1, and 1.1 (all concentrations are in vol %). The presence of the species, HO_2, NH, HNO, HCO, NO_2, N_2O, O^-, H^-, OH^-, KO, KH, KOH, and $K(OH)_2$, was taken into account. The interesting fact is discussed of a marked change in equilibrium composition on addition of K_2CO_3. The role of the molecular compounds of K, viz., KO, KH, KOH, and $K(OH)_2$, is analyzed and it is shown that when these compounds are taken into account, the calculated equilibrium composition of the combustion products changes substantially, and the calculated electron concentration is lowered. Orig art. has: 3 figures.

[SM]

SUB CODE: 21/ SUBM DATE: 28Oct65/ ORIG REF: 002/ OTH REF: 004

Card 2/2 hs

GUREVICH, L.Ye.

Planning electric energy consumption in by-product coking plants.
Koks i khim.no.7:49-50 '56. (MLRA 9:12)

1. Kemerovskiy koksokhimicheskiy zavod.
(Electric power) (Coke industry)

GUREVICH, L.Ye.; SYCHEV, A.T.

Automation of coke oven heating systems. Koks i khim. no.4: 22-24 '62. (MIRA 16:8)

1. Kemerovskiy koksokhimicheskiy zavod.
(Coke ovens) (Automatic control)

DEMENT'YEV, A.; GUREVICH, M.

Conference of stomatologists, dentists and dental technicians in Novosibirsk. Stomatologiia no.6:59 '53. (MLRA 7:1)
(Novosibirsk--Dentistry) (Dentistry--Novosibirsk)

GUREVICH, M.
USSR/Physics

Card 1/2

Authors : Gurevich, M.

Title : Theory of Newton's colors (Newton's rings)

Periodical : Usp. Fiz. Nauk, 52, Ed. 2, 291 - 310, 1954

Abstract : Mention is often made about seven basic Newton colors as compared with the three colors of much later theories. However, these seven colors which appeared before Newton as result of erroneous analogy with sound phenomena were no hindrance in presenting all qualitative differences of colors by the aggregation of points on a plain graph and reducing all color differences to the number three avoiding a great number of measurements which would usually be required for seven basic colors. It is easily understood that regardless of how many colors Newton would have noticed in the spectrum - seven, eight or more-, but having summarized them according to his law of CG he would always find one general center on the surface of the graph which inevitably leads to three-dimensionality of the color which is only superficially concealed by the seven colors of the solar spectrum.

Usp. Fiz. Nauk, 52, Ed. 2. 291 - 310, 1954 (additional card)

Card 2/2

Abstract : The second law of color blending, which was attributed to Grassmann, and which confirms that the continuous change in radiation composition corresponds with the continuous change in color, is also a direct result of the method of finding the CG as described by Newton. Graphs.

Institution : .....

Submitted : .....

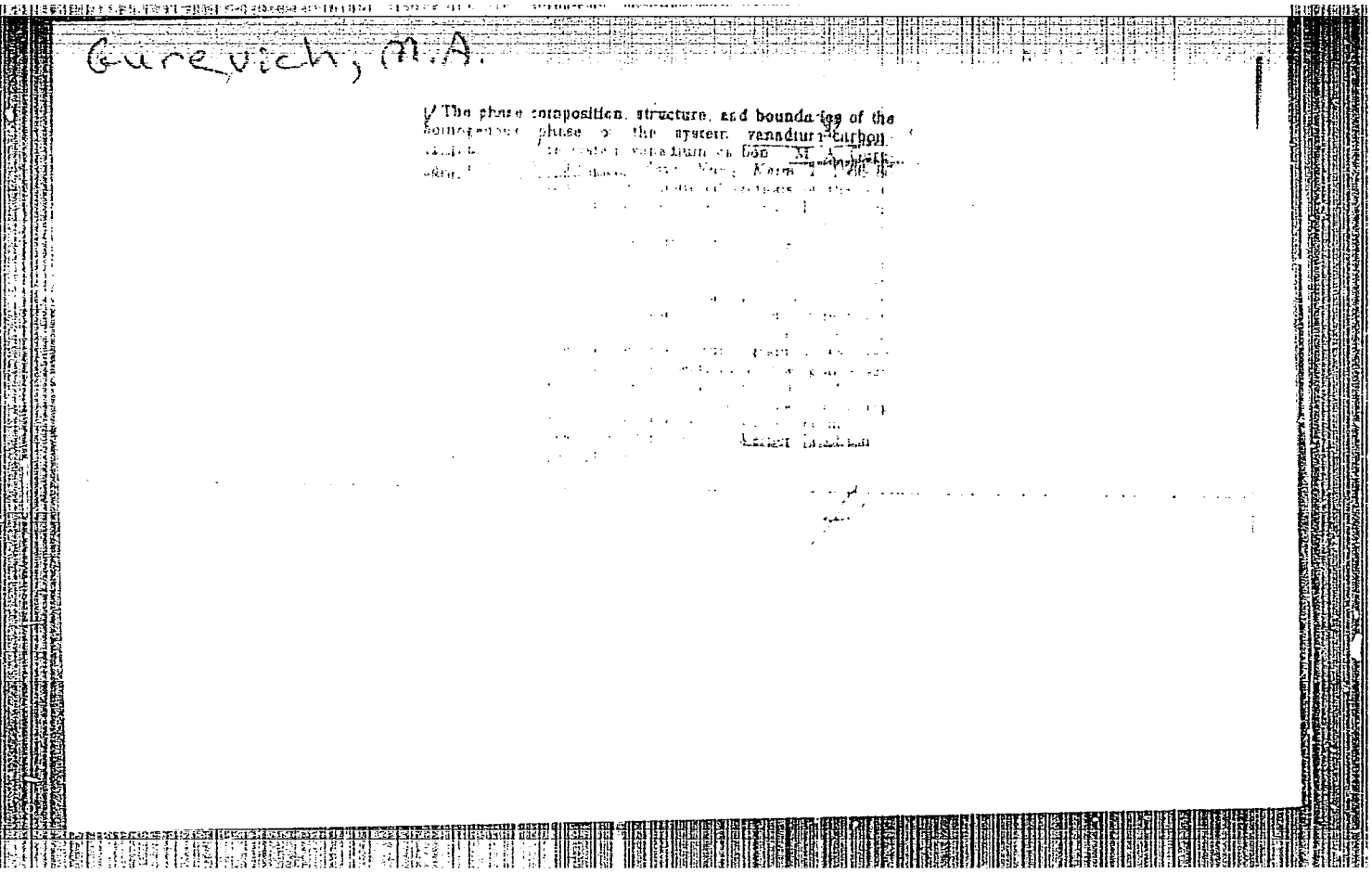
YAKOVTSEV, I.; LEVCHENKO, P.; GUREVICH, M.

Foremost drivers of the Kharkov automotive transportation trust.
Avt. transp. 36 no. 6:53 Je '58. (MIRA 11:7)
(Kharkov--Automobile drivers)

GUREVICH, M.

Rational placement of workers in a brick plant. Biul. nauch. inform.: trud i zar. plata 3 no.8:24-27 '60. (MIRA 13:9)

(Leningrad economic region—Brick industry—Production standards)



Gurevich, M.A.

The phase composition, structure, and boundaries of the homogeneous phase in the system vanadium-carbon

GUREVICH, M.A.

Pipe-cutting machine. Sbor.nauch.-tekh.inform.Azerb.inst.nauch.-tekh. inform.Ser.Mashinostroi.prom. no.4:8-11 '62. (MIRA 18:8)

L 40814-65 EWT(1)/EED(b)-3 Pu-4 IJP(c) WW
ACCESSION NR: AP4046275 S/0040/64/028/005/0956/0958

15
B

AUTHOR: Gurevich, M. I. (Moscow)

TITLE: Sound conductivity of a lattice with small constant

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 5, 1964, 956-958

TOPIC TAGS: sound conductivity, narrow space lattice, sound reflection, sound transmission

ABSTRACT: The author gives a new proof of the formula by G. D. Malyuzhints (unpublished) for the calculation of the coefficients of reflection and transmission of sound through a space lattice with small constant. The knowledge of the associated mass is essential in the calculation. The fluid is assumed to be ideal and compressible, the pressure a function of density only, velocity of particles, density and pressure changes small. Orig. art. has: 12 equations and 1 drawing.

ASSOCIATION: None

Card 1/2

L 40814-65
ACCESSION NR: AP4046275

SUBMITTED: 29Jun64 ENCL: 00 SUB CODE: GP, ME

NR REF SOV: 001 OTHER: 002

Card 2/2

L 29514-65 EWP(e)/EWT(m)/EPF(n)-2/EWA(d)/EPR/EWP(t)/EWP(b) Pg-4/Pu-4
IJP(c) JD/JG/AT/WH

ACCESSION NR: AP5006187 S/0226/65/000/002/0015/0021

AUTHOR: Meyerson, G. A.; Kiparisov, S. S.; Gurevich, M. A.; Teng, Feng-hsiang 13 12

TITLE: Synthesis and properties of vapor-deposited hard alloys of the pseudo-binary SiC-BC system 15

SOURCE: Poroshkovaya metallurgiya, no. 2, 1965, 15-21

TOPIC TAGS: silicon carbide, boron, silicon carbide alloy, boron alloy, alloy microstructure, alloy composition, alloy microhardness, alloy property

ABSTRACT: To determine the solubility of B and C in SiC a series of alloys of the pseudobinary SiC-BC system have been investigated. The alloys were produced by vapor deposition according to the reaction

$$7SiCl_4 + 7BBr_3 + 2C_7H_8 + 16.5H_2 = 7(SiC—BC) + 28HCl + 21HBr,$$

with the deposition rate varied from 0.033 to 0.008 mm/min. Depending on the deposition conditions, the obtained alloys were in the form of large light, dark grey, or fine black crystals. Alloys containing up to 40 mol% BC (13.2 wt% B) were single-phase alloys with about 1% free carbon, which means that B and C dissolve SiC in a

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L 29514-65
ACCESSION NR: AP5006187

ratio B:C = 1:1, i.e., the B atoms replace Si atoms in the SiC lattice. In alloys containing more than 50 mol% BC (17.3 wt% B), a second phase, thermodynamically stable B_4C, and a corresponding excess of free graphite were observed; the free C content increased to 12—16 wt%. All SiC-BC alloys had an fcc lattice with a constant decreasing from 4.3580 Å for pure silicon to 4.3530 Å for alloys with 60 mol% BC. With B content increasing from 0 to 13.2 wt% (40 mol% BC), the microhardness of single-phase alloys increased continuously from 3380 to 4600 dan/mm^2, and then remained constant with further increases of B content. Thus, all experimental data have shown that the solubility limit of B in SiC is between 13 and 17 wt% (near 40 mol% BC), i.e., appreciably higher than was previously reported. The higher hardness and, consequently, higher wear resistance of SiC-BC alloys compared with pure SiC indicates the possibility of further improvement in the properties of SiC. Orig. art. has: 6 figures and 5 tables. [MS]

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute for Steel and Alloys)

SUBMITTED: 04Dec63 ENCL: 00 SUB CODE: MM, GC

NO REF SOV: 006 OTHER: 000 ATD PRESS: 3197

Card 2/2

KUDRYAVTSEV, N.T.; BEK, R.Yu.; GUREVICH, M.A.

Electrodeposition of silver by alternating current. Zhur.prikl.-khim. 35 no.3:553-562 Mr '62. (MIRA 15:4)
(Silver plating)

TSYGAN, V.T.; FOMIN, V.G.; GUREVICH, M.A.

Attachment to the GUR-3 X-ray goniometer for operation in the regime of a biprism spectrometer. Zav.lab. 29 no.11:1383-1384 '63. (MIRA 16:12)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

GUREVICH, M. A.; ZVIZZHOV, V. V.; CHEREUKHIN, K. V.

Machine for cutting fiber wastes. Khim. volok. no.6:58-59 '62. (MIRA 16:1)

(Mogilev--Textile machinery)

GUREVICH, M. A.

USSR/Electricity
Cathodes, Mercury
Ignition

Sep 1947

"Investigating the Reverse Ignition of Apparatus with Mercury Cathodes," A. E. Askinazi, (deceased), M. A. Gurevich, Engr, L. A. Sena, Leningrad Polytechnical Institute imeni Kalinin, 8 pp

"Elektrichestvo" No 9

Reverse ignition is one of the greatest faults of systems with mercury cathodes and very often leads to serious damage to the whole apparatus. In the laboratory, the authors studied the relationship of the frequency of the reverse ignition to the discharge circuit and the peculiarities of the cathode. This report was presented at the 1946 Research and Investigation Conference of the Leningrad Polytechnical Institute imeni Kalinin.

IA 29T29

GUREVICH, M. A

PA 236T40

USSR/Electronics - Magnetic Amplifiers Sep 52

"Magnetic Amplifiers," M. Gurevich

"Radio" No 9, pp 17-19

Discusses the operating principle, circuits, and uses of magnetic amplifiers and the use of feedback in them. Stresses the use of these amplifiers in equipment which is subjected to shock and vibration, e.g., in telemetering and remote-control systems, in some servo systems for controlling two-phase ac reversible motors, etc.

236T40

8(2) PHASE I BOOK EXPLOITATION SOV/1855

Soveshchaniye po elektricheskim kontaktam. Moscow. 1956.

Elektricheskiye kontakty; trudy soveshchaniya (Electrical Contacts; Transactions of the Conference) Moscow, Gosenergoizdat, 1958. 303 p. 4,150 copies printed.

Editorial board: B.S. Sotskov (Resp. Ed.), V.V. Usov, R.S. Kuznetsov, I.Ye. Dekabrun, and Z.S. Kirillova; Ed.: I.Ye. Dekabrun; Tech. Ed.: K.P. Voronin.

PURPOSE: This collection of articles is intended for engineers and technicians designing, developing and operating electrical apparatus and is concerned with electric contact materials. It may also be useful in scientific research institutes and laboratories.

COVERAGE: This book comprises reports delivered at the Electric Contacts Conference held in Moscow in November, 1956. These papers cover physical processes occurring during connecting or disconnecting, methods of designing and testing electric contacts, production and characteristics of contact materials. During this conference of the Institut avtomatiki telemekhaniki AN SSSR (Institute of Automation and Telemechanics, Academy of Sciences, USSR) participants approved periodic conferences of physicists, metallurgists, chemists and apparatus design specialists to discuss problems of electric contacts, which are the components of electric apparatus primarily influencing the reliability of electric systems, especially d-c control systems. Their physical, thermal, mechanical and chemical processes have still not been well analyzed. References are given at the end of most of the reports.

II. DESIGN : APPLICATION AND TESTING METHODS

Peyler, G.O. (Zavod "Dinamo," Moscow - Moscow "Dinamo" Plant) Wear Resistance of Contacts in D-c Contactors and Controllers 138
The author describes the method of testing wear resistance of contacts at the "Dinamo" Plant in Moscow and proposes that all other plants adopt this method as a standard one to enable the comparison of test results.

Gordon, A.V. Methods of Testing the Resistance to Wear of Electric Contacts in Aircraft D-c Contactors 148
The author reports the results of work he carried out along with engineers K.V. Isayev, M.A. Prusov, V.P. Simonova. He describes the method applied for testing aircraft D-c contacts. This method permits approximating testing conditions with real operating conditions. He suggests applying this method for testing contactors of general industrial use.

Piks, Y.I., and M.A. Gurevich. (Zavod "ATE-1 "-Moscow "ATE-I Plant) Contacts of Vibrator Voltage Regulators 156
The authors summarize the results of investigations they carried out in the Electric Machine Laboratory of the "ATE-1" Plant along with Engineers Ye.K. Shvedov, V.I. Khrunin, Ya.M. Levit, L.B. Bayer, R.V. Gorelov, D.G. Suchkova on operating conditions of contacts in vibrator voltage regulators of automobile generators, on the design of contact fittings and on various pairs of contact metals.

III. PRODUCTION AND CHARACTERISTICS OF CONTACT MATERIALS

Al'tman, A.B., I.P. Melashenko, and E.S. Bystrova (Nauchno-issledovatel'skiy institut elektrotekhnicheskoy promyshlennosti - Scientific-Research Institute for the Electrical Industry) Modern Sintered-Metal Electric Contacts. 171
Sintered metals are presently the most suitable materials for arcing tips of high-duty circuit-breakers. The authors explain the technical requirements, describe the structure of the compositions, methods of production, characteristics and applications. 171

Frantsevich, I.N., and O.K. Teodorovich. (Institut Metallokeramiki i Spetsial'nykh Splavov AN USSR - Institute for Sintered Metals and Special Alloys, UkrSSR Academy of Sciences) Production Methods of Sintered-Metal Electric Contacts
The authors describe the results of their investigation of the comparison of various methods of producing sintered metals. 186

Usov, V.V. and Murav'yeva, Ya.M. (Nauchno-issledovatel'skiy institut elektrotekhnicheskoy promyshlennosti - Scientific-Research Institute for the Electrical Industry) Thermochemical Method for Production of Contact Compositions. 199
Unification of alloys at higher temperatures results in structure similar to that obtained by the sintered metal power method. The authors explain this thermochemical method and its advantages.

Al'tman, A.B., and E.D. Bystrova. (Scientific-research Institute for the Electrical Industry) Internal Structure of Wear-resistant Electric Contacts 214
The authors discuss their investigation of the influence of internal structure of heterogeneous materials on wear resistance. They paid special attention to the alloys Ag-Cu, Ag-Si-Mg, and Ag-Al.

Card 8/11

GUREVICH, M. A.

L 48557-65 ENT(1)/EEC(m)/EWA(h) Peb

ACCESSION NR: AP5009789 UR/0292/65/000/004/0024/0025

AUTHOR: Lidorenko, N. S. (Doctor of technical sciences, Professor); Moiseyev, I. N. (Candidate of technical sciences); Voronkov, G. Ya. (Candidate of technical sciences); Gurevich, M. A. (Engineer)

TITLE: Electrochemical transducers for vibration and weight measurements

SOURCE: Elektrotekhnika, no. 4, 1965, 24-25

TOPIC TAGS: electronic component, vibration measurement, physics laboratory instrument

ABSTRACT: Vibration studies were conducted with the transducer fixed to the platform of an electrodynamic bench, its diaphragm perpendicular to the direction of the vibrations. The bench afforded smooth control of vibration frequencies (20—250 cps) and amplitudes (5—200 μ).

The dependence of output current I on vibration frequency ν for various vibration amplitudes λ is shown in Fig. 1a. With an increase in the vibration amplitude at a constant frequency (20 cps), the output current also increases (Fig. 1b). The sensitivity γ of the electrochemical vibrometer

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L 48557-65

ACCESSION NR: AP5009789

(transducer) was determined as the ratio of the output current to the square root of the load (in grams). The dependence of γ on ν is shown in Fig. 1c. As is shown, the sensitivity drops linearly with increased vibration frequency. The attachment of small loads (up to 10μ) to the diaphragm or corresponding enlargement of the transducer chamber increases the sensitivity of the device by 1.5—2.5 relative units per gram of additional mass.

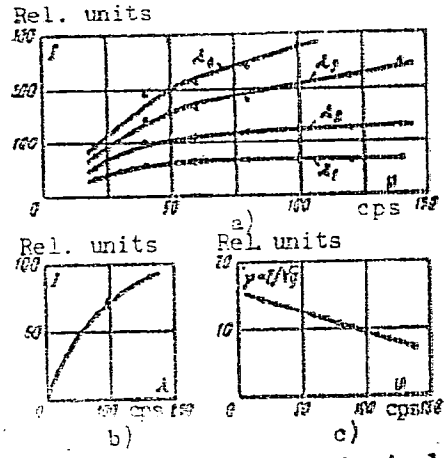

Fig. 1. Results of electrochemical vibrometer studies

a - Dependence of the transducer output current on the vibration frequency for vibration amplitudes λ_1 = 25 μ, λ_2 = 50 μ, λ_3 = 100 μ, and λ_4 = 150 μ; b - dependence of the transducer output current on the vibration amplitude at a frequency of 30 cps; c - dependence of the transducer sensitivity on the vibration frequency.

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L 48557-65

ACCESSION NR: AP5009789

Electrochemical transducers for measuring continuous quantities are of great practical interest because of their structural simplicity and high sensitivity. However, since they react to variations of static pressure rather than to the pressure itself, instrument-response readout of continuous signals is limited to short intervals following instantaneous application of the load.

The ordinary electrochemical transducer of periodic signals reacts only to changes in input parameters and does not possess a "memory" capacity. Attempts were made to ascertain factors which would increase the recovery time of the depolarizer in the main cathode and provide a memory time, i.e., the time in which the transducer output current holds its maximum value.

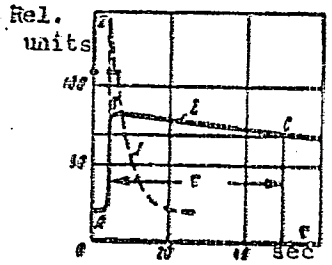

Fig. 2. Output current drop vs time

1 - Common electrochemical transducer; 2 - "memory" transducer.

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L 48557-65

ACCESSION NR: AP5009789

The voltage of the polarizing source and the resistance of the transducer anode were among the factors considered. However, reduction of the polarizing voltage and the addition of another resistor in the anode circuit of the ordinary cylindrical-cathode transducer resulted in an increase of memory time of only 0.7 sec. Accordingly, a special transducer was designed to reduce the rate of electrolyte flow through the main cathode chamber, develop a suitable cathode surface, and lower correspondingly the cathode current density. The main cathode of improved design is a tightly rolled grid firm-set in the channel connecting the transducer chambers. A characteristic oscillogram showing the drop in output current over time is given in Fig. 2 (curve 2). The section of the curve to the left of A characterizes the unloaded transducer; AB corresponds to the drop in output current at the moment of loading; and BC corresponds to a 10% current drop from the maximum. For comparison, curve 1 shows the drop in output current of the usual cylindrical-cathode transducer with a 700-mv volt-ampere characteristic and without an additional anode resistance. Fig. 3 shows the relationship between the memory time and the anode resistance for various values of the polarizing voltage. All experimental data refer to a 1-gram load and transducer sensitivity of about 20 μamp/g. The values of the memory time obtained indicate the feasibility of using electrochemical transducers for measuring continuous signals. Orig. art. has 4 figures.

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L 48557-65

ACCESSION NR: AP5009789

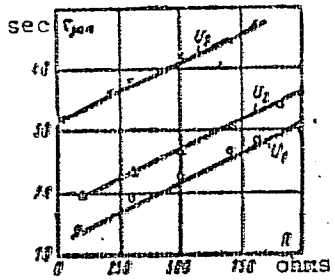

Fig. 3. The effect of anode resistance on the "memory" time of electrochemical transducers for various values of the polarizing voltage U_1 = 800 mv; U_2 = 400 mv; U_3 = 200 mv.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EC, GP

NO REF SOV: 002 OTHER: 000 FSB, v. 1, no. 6

Card 5/5

GUREVICH, M.A. (Krivoy Rog, ul. Nikopol'skaya, d.17, kv.31)

Case of degeneration of a fibroadenoma of the mammary gland into a sarcoma. Klin. khir. no.5:74-75 My '62. (MIRA 16:4)

1. Krivorozhskiy gorodskoy onkologicheskiy dispanser.
(MAMMARY GLANDS—TUMORS)

POLUEKTOV, Yu.A.; GUREVICH, M.A.

Single observation of a gastric eosinophilic granuloma. Khirurgiia no.3:125-128 '63. (MIRA 16:5)

1. Iz Krivorozhskogo gorodskogo onkologicheskogo dispansera (glavnyy vrach M.A.Zybina).
(STOMACH--TUMORS)

GUREVICH, M.A. (Krivoy Rog, 95-y kvartal, ul. Nikopol'skaya, 17, kv. 31); ZYBINA, M.A. (Krivoy Rog, 50, ul. Tramvaynaya, 15, kv. 17)

Generalized lipomyxosarcomatosis; case report. Vop. onk. 10 no.4:77-80 '64. (MIRA 17:11)

1. Iz Krivorozhskogo gorodskogo onkologicheskogo dispansera (glavnyy vrach - M.A. Zybina).

GUREVICH, M.A.; PETROSYAN, M.G. (Moskva)

Focal changes in the myocardium after prolonged paroxysmal tachysystole. Klin.med. 38 no.12:122-125 D '60. (MIRA 14:2)

1. Iz 1-y terapevticheskoy kliniki (zav. - doktor med.nauk M.G. Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirskogo i Kolomenskoy gorodskoy bol'nitsy (glavnyy vrach P.M. Grishin).
(ARRHYTHMIA)

GUREVICH, M.A.

Myocardial infarction in young people; some etiological, pathogenic, and clinical problems. Terap.arkh. 32 no.10:46-55 '60. (MIRA 14:1)

1. Iz 1-y terapevticheskoy kliniki (zav. - deystvitel'nyy chlen AMN SSSR prof. N.S. Molchanov) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirskogo.

(HEART INFARCTION)

GUREVICH, M.A.; IL'ICH, O.V.

Focal changes in the myocardium in certain diseases of the blood. Vop. klin. pat. no.2:223-231 '61 (MIRA 16:12)

1. Iz terapevticheskoy kliniki (zav. - doktor med. nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni Vladimirskogo.

KALUGINA, L.T.; GULEVICH, M.A.; ANDRIYEVA, T.N.

Analysis of the incidence of death from myocardial infarct from data of the therapy clinics of Moscow Province Scientific Clinical Research Institute for 1950 to 1957. Vop. klin. pat. no.3:45-55 '61. (MIRA 14:12)

1. Iz Terapevticheskoy kliniki (zaveduyushchiy doktor med. nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F.Vladimirskogo.
(DEATH CAUSES)
(MOSCOW PROVINCE--HEART--INFARCTION)

GUREVICH, M.A.

Myocardial infarct in young people from data of the therapy clinics of Moscow Province Scientific Clinical Research Institute (Some problems of its etiology, pathogenesis and clinical course). Vop. klin. pat. no.3:64-70 '61. (MIRA 14:12)

1. Iz Terapevticheskoy kliniki (zaveduyushchiy doktor med. nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta imeni M.V.Vladimirskogo
(MOSCOW PROVINCE--HEART--INFARCTION)

KALUGINA, L.T.; GUREVICH, M.A.; ANDREYEVA, T.N.

Late observations of patients who have had a myocardial infarct. (MIRA 14:12)
Vop. klin. pat. no.3:147-158 '61.

1. Iz 1-y Terapevticheskoy kliniki (zaveduyushchiy doktor med.nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta imeni M.V.Vladirskogo.
(HEART--INFARCTION)

GUREVICH, M.A.

Focal changes in the myocardium following a nonpenetrating wound of the chest. Vop. klin. pat. no.3:159-163 '61. (MIRA 14:12)

1. Iz 1-y Terapevticheskoy kliniki (zaveduyushchiy doktor med. nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta imeni M.V. Vladimirskogo.
(CHEST--WOUNDS AND INJURIES)
(HEART--INFARCTION)

GUREVICH, M.A.

Myocardial infarctions associated with endarteritis obliterans in young people. Sov.med. 25 no.7:25-31 Jl '61. (MIRA 15:1)

1. Iz I terapevticheskoy kliniki (zav. - doktor meditsinskikh nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta (dir. - kand.med.nauk P.M.Leonenko).
(HEART--INFARCTION) (ARTERIES--DISEASES)

GUREVICH, M.A.

Myocardial infarcts following physical overstrain. Kardiologiia 2 no.3:30-35 My-Je '62. (MIRA 16:4)

1. Iz 1-y terapevticheskoy kliniki (zav. - doktor med.nauk M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F.Vladimirskogo (dir. - kand.med. nauk P.M.Leonenko).
(HEART--INFARCTION) (STRESS (PHYSIOLOGY))

GUREVICH, M. A.

USSR/Metals - Roasting

FD-433

Card 1/1 : Pub. 153 - 3/18

Author : Gurevich, M. A.; Paleyev, I. I.; Timoshin, Yu. A.

Title : The process of roasting the fuel impurities out of porous materials

Periodical : Zhur. tekh. fiz. 24, 599-609, Apr 1954

Abstract : A theoretical and experimental work attempting to fully solve the problem concerning the roasting of admixtures of carbon and other nonvolatiles from porous materials such as ceramics, briquets, etc. Acknowledge participation of S. M. Pavlov, A. N. Frolova, and L. A. Shilov in the experiments and of D. S. Gorshkov in the integration of the equations.

Institution : —

Submitted : November 11, 1953

GUREVICH, M. A.

UNCLASSIFIED

JOURNAL
Authors: M. A. Gurevich and K. P. Malyus-Malitski
Title: Zhurnal Tekhnicheskoi Fiziki, September, 1954, Vol 24, No. 9, p 1724.
Translated Title: Journal of Technical Physics
Translated Title of Article: Self Recording Magneto-Electric Scales

Set 1/1, Card 1/1

AUTHORS' ABSTRACT: For uses in which the investigated specimen is not easily accessible (investigations in furnaces and reactors, etc.), for measuring low values of weight losses. Figures 1 and 2 show the design principle and the circuit of the "simple" scales. Figure 3 shows the circuit of the scales with differential recording. Weight losses of very low magnitudes can be measured and recorded.

vll
December 30, 1954

Entire Abstract

GUREVICH, M.A.

114-8-4/16

AUTHOR: Paleyev, I.I., Doctor of Technical Sciences and Gurevich, M.A., Candidate of Technical Sciences.

TITLE: On a cause of mechanical incomplete combustion in a furnace with a 'boiling' layer. (Ob odnoy prichine mekhanicheskogo nedozhoga v topke s 'kipyashchim' sloyem)

PERIODICAL: "Energomashinostroyeniye" (Power Machinery Construction) 1957, Vol.3, No.8, pp. 15-19 (U.S.S.R.)

ABSTRACT: A special feature of furnaces with a 'boiling' layer is a good mixing of the fuel at all cross-sections of the layer. In large industrial installations in which there is a considerable distance between the points of fuel supply and ash removal, mixing within the length of the layer is much weaker. But in small installations and particularly in experimental rigs for investigations on the 'boiling" layer there is intense mixing throughout the volume of the layers. This article considers a device represented in Fig.1 in which the fuel particles are delivered into the combustion chamber through an upper aperture, the ashes are drawn from the bottom to another aperture and draught is applied through a grid.

In such installations there is considerable mechanical incomplete combustion even when the mean time for which particles remain in the chamber is much greater than the time

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On a cause of mechanical incomplete combustion in a furnace with a 'boiling' layer. (Cont.)

114-8-4/16

necessary for complete combustion of the particles in the corresponding conditions. The cause of this is obvious; since the location of any given particle is governed by the laws of chance, part of the fuel will be in the chamber for a very short time. It is important to be able to calculate the residue of fuel in the discharge ash. In order to calculate the conditions of the actual chamber it is also necessary to know the mean residue of combustible material in the contents of the chamber. Finally, in some cases an important part is played by the uniformity of the residue of combustible material discharged from the chambers. This article attempts to solve the problem in certain simple cases.

In order to determine the compositions of the ash or material in the chamber the laws of probability may be used. If the course on the process of combustion of fuel with time is known it is possible to determine the average amount that is not consumed for each group of particle size as a function of the ratio between the mean time of residence of this fraction in the furnace and the time necessary for complete combustion.

The mathematical analysis is then given under the following

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On a cause of mechanical imcomplete combustion in a furnace with a 'boiling' layer. (Cont.) 114-8-4/16

headings: distribution of particles according to time of residence in the chamber; the law of combustion of fuel particles; the residue of fuel in the ash; and the residue of fuel in the combustion chamber.

It is pointed out that the distribution functions derived are applicable not only to furnaces with a 'boiling' layer but also to other furnaces with intensive mixing of the fuel. When the mixing is not instantaneous, movement of the fuel layer as a whole must be allowed for. Difficulties are encountered in this case. It is evident that calculation of the mean fuel residue (in the ash and in the chamber) can be made for any desired law of combustion of particles with time so long as the law is known from theoretical construction or from experimental data.

There are 3 figures and 6 Slavic references.

AVAILABLE: Library of Congress

Card 3/3

SOV/124-58-11-12942

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 154 (USSR)

AUTHORS: Gurevich, M. A., Yekimov, G. K.

TITLE: An Instrument for the Measurement of the Total-head Distribution Profile in Fluid Jets (Pribor dlya izmereniya profilya napora v zhidkikh struyakh)

PERIODICAL: Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1957, Nr 12, pp 49-59

ABSTRACT: A presentation of the calculation and description of the design, the electric circuitry, and test results of an instrument proposed by L. G. Shikhov (Leningr. politekhn. in-t, Graduate Thesis, 1954; unpublished). The instrument operates on the principle of the capacitive manometer and consists of a stepped cylinder filled with water. The wide portion of the cylinder is covered with the diaphragm of a capacitive transducer; a capillary tube ("needle") is exposed to the total-head pressure. The electric circuitry differs from the usual type employed in capacitive manometers by the presence of a device which excludes the capacity of the connecting hose from the resonance network. The authors point

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An Instrument for the Measurement of the Total-head Distribution (cont.)

out that the natural vibration frequency (NVF) of the sensor of the instrument is significantly (by an order of 10^2) lower than the NVF of the diaphragm, whereupon they make certain assumptions and derive an equation for the approximate computation of the NVF and the logarithmic damping decrement and propose a calculation procedure for the instrument. Following are the contents and results of the tests: 1. A determination of the NVF and of the logarithmic damping decrement was performed for several sensors (results are adduced for four of them) which differ in the dimensions of the needles and diaphragms; these determinations were accomplished by means of oscillographic recordings of the total head of a water jet which was chopped by a rotating disk. Within the limits of accuracy of the measurements a proportionality was observed between the experimental and the calculated values of the frequency values (the formulas are accurate except for a constant factor). 2. Measurements were made of the total-head profile in jets of liquids of different viscosity (water, castor oil, oleogel of aluminum naphthanate) within a broad speed range (3-80 m/sec) by means of the oscillographic recording of the readings of a sensor moving strictly along a diameter of the jet, with simultaneous pin-pointing of its coordinates. A verification was accomplished by means of a comparison of the mean velocity computed from the discharge and from the total-head profile, and also by the construction of the total-head profile by a

An Instrument for the Measurement of the Total-head Distribution (cont.)

different method, namely, the introduction into the liquid of a finely dispersed glittering powder and the stroboscopic observation of the displacement of periodically illuminated particles thereof. The data and graphs adduced testify to the fairly close agreement of the results. The highest NVF (1500-1800 cps) is indicated for a sensor with a needle diameter of 1 mm, a 2-mm thickness of the steel diaphragm, and a diameter of the unconstricted part of 16 mm.

A. A. Rabinerson

AUTHORS Agafonova, F.A. Gurevich, M.A. Paleyev, I.I. 57-8-23/36

TITLE A Contribution to the Theory of Burning of the Liquid Fuel Drop.
(K teorii goreniya kapli zhidkogo topliva.)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 8, pp. 1818-1825 (USSR)

ABSTRACT Calculations based on a number of simplified assumptions, which are consequently of approximate nature, are given. Inspite of these insufficiencies they make possible the following conclusions: 1.- The fact that the diffusion theory in the case of the experiment offers coinciding evaporation - velocity values can not yet be taken as proof for a combustion process of liquid fuel taking place on the basis of pure diffusion. Practically the same evaporation velocities are obtained in the case of a taking account of the finite velocity of the chemical reaction.
2.- The consideration of the velocity of the chemical reaction leads to much smaller calculation of the maximum temperature in the case of the same evaporation velocity. This is proved qualitatively by the experiment.
3.- Taking into account the velocity of chemical reaction leads to an approach between the zone with maximum

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A Contribution to the Theory of Burning of the Liquid Fuel Drop.

(calculated) temperatures and the liquid surface. It also coincides qualitatively with the measurement results.
4.- From the fact that diffusion theory supplies values for the evaporation velocity which approach the experimental values we can not conclude that the fuel vapors in the area of the boundary layer burn. The exit of unburned vapors can be very considerable. This is proved indirectly by the data of gas-turbine experiments.
5.- The consideration of the velocity of chemical reaction offers the possibility to analyse the conditions for the inflammation and for the extinction of liquid fuel.
(With 2 illustrations and 4 Slavic references).

ASSOCIATION: Leningrad Polytechnical Institute im. Kalinin
(Leningradskiy politekhnicheskiy institut im. Kalinina.)
SUBMITTED: January 24, 1957
AVAILABLE: Library of Congress.

CARD 2/2

GUREVICH, M.A.

57-2-27/32

AUTHORS: Gurevich, M. A. , Shteynberg, V. B.

TITLE: The Flame Temperature of a Single Drop of Liquid Fuel (Temperatura plameni odinochnoy kapli zhidkogo topliva)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 2, pp.394-401 (USSR)

ABSTRACT: The attempt was made here to measure the maximum temperature in the combustion zone of individual drop. The measurements were performed in a series of falling drops of equal dimensions. For this purpose the authors used the test-apparatus constructed already earlier by I. G. Malenkov, Student-Diplomant, in the Laboratory of the Institute. The authors employed the optical method of measurement with colors. For this a color-pyrometer with small inertia was used. It had been developed in 1948 - 1952 in the same Laboratory. A short description of it is given. The optical measuring method was here extended for the case of the measurement of a color-temperature of sources with a small light-intensity. Its advantages in comparison to the ordinary measuring method are given: 1.) The pos-

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The Flame Temperature of a Single Drop of Liquid Fuel

sibility of carrying out measurements with weak light-sources, 2.) much lower demands on the isolation of the point A, 3.) automatic consideration of the distortions brought in by foreign permanent light-sources, 4.) a simple method of controlling the sufficient linearity of the light-characteristics of photoelectric cells. The influence of the temperature gradient and the selectivity of flame-emission is investigated. The measured value of the color temperature may essentially differ from the maximum flame-temperature for two fundamental reasons: due to the emission of the colder flame-layers and due to the selectivity of the flame-emission. It is shown how a rough evaluation of the deviations to be expected is obtained by way of calculation. It is shown that for this purpose the coefficient of flame-absorption and the exponent n must approximately be determined. - The performed measurements confirmed that the maximum temperature in the flame of an individual point is considerably lower than that of the diffusion theory. This difference is certainly not less than 500°C and is considerably higher at a higher oxygen-content in the gas medium. Two fundamental conditions may explain the fact that

The Flame Temperature of a Single Drop of Liquid Fuel

the actual velocities of evaporation in the drop coincide with those of the calculation according to the diffusion theory, whereas the temperature in the combustion zone is much lower than that according to calculation. 1.) The diffusion theory does not take into account the heat-exchange by radiation. The flame-emission from the outer layers leads to a decrease in the flame-temper ature and the emission on the drops and to an increase in the velocity of evaporation. 2.) A consideration of the finite velocity of the chemical reaction practically leads to the same velocities of evaporation according to calculation, but to considerably lower flame-temperatures. Both facts no doubt are important. It would, however, be important to determine which of the two is the most essential factor. There are 9 figures, and 3 references, 1 of which is Slavic.

ASSOCIATION: Leningrad Polytechnical Institute, imeni M. I. Kalinin
(Leningradskiy politekhnicheskiy institut im. M. I. Kalinina)

S/196/61/000/006/008/014
E073/E535

11.7350

AUTHORS: Agafonova, F.A., Gurevich, M.A. and Terasova, Ye.F.

TITLE: Conditions of stability of combustion of individual droplets of liquid fuel

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, 1961, No.6, p.8, abstract 6G55 (Sb. 3-e Vses. soveshchaniye po teorii goreniya. T.2., M., 1960, 29-39)

TEXT: In analysing the operation of liquid fuel fired furnaces, it is important to know whether the fuel drops are in the state of combustion or evaporation. Under these conditions the speeds of evaporation of the drops may differ by several times and this greatly influences the length of the flame. It was observed repeatedly that the diffusion theory is not suitable for analysis of the conditions of ignition and extinction. An approximate analysis of the conditions of ignition, extinction and completeness of combustion is possible if the final reaction speed is taken into consideration. An equation of heat and mass transfer, taking into consideration the chemical reactions, is given which was compiled

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Conditions of stability of ...

on the assumption that the process of combustion develops within the limits of a spherical layer (reduced film). The process of combustion and transfer are assumed as being quasi-stationary and the physical constants as not being dependent on the temperature and the local composition of the mixture. In principle, solution of the derived equations should enable obtaining relations between the parameters which determine the conditions of ignition and extinction of a drop, the maximum temperature and the fraction of unburned vapours for any condition of combustion of the drop. However, the large number of parameters and the laboriousness of the calculations hardly permits using them on a large scale. Therefore, in addition to analysing the equations, experimental work was carried out for the purpose of verifying the main conclusions and for accumulating data on the stability of combustion of drops. Gasoline drops of 0.2 to 0.5 diameter were fed into a vertical furnace by means of a special dropper. At the entry into the furnace, the drops were ignited by a gas flame and burned completely in the furnace. The gas sucked from the furnace was bubbled through a solution of sodium nitrate in concentrated

Conditions of stability of ...

sulphuric acid. Under the influence of hydrocarbon vapours, this solution became yellow; this occurred in all the experiments. A dependence of the fraction of unburned vapours on the flow speed was established. A series of tests were made for determining the limits of stability of combustion of the drops. Gasoline and kerosene drops with initial diameters of 1.5 to 2 mm on a quartz suspension device were used. Dependences were established of the "tear-away" speed of the flow on the temperature of the air and on the content by volume of oxygen in the stream. It was found that the "tear-away" speeds for falling drops are considerably higher than for suspended ones. 7 references.
Abstracted by S. Tager.

[Abstractor's Note: Complete translation.]

Card 3/3

25739
S/123/61/000/012/032/042
A004/A101

11.7350

AUTHORS: Agafonova, F. A.; Gurevich, M. A.; Tarasova, Ye. F.

note: probably not same GAMREVICH, M. A. metallurgical-chemist Tag

TITLE: The conditions of steady combustion of single drops of liquid fuel

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 12, 1961, 21, abstract 12I176 (V sb. "3-ye Vses. soveshchaniye po teorii goreniya v. 2". Moscow, 1960, 29-39)

TEXT: The authors carried out an approximated calculation of the conditions of ignition, extinction and complete combustion taking into account the finite rate of chemical reaction. The equation systems of heat and mass transfer were written down. It was assumed that the combustion process develops within a spherical layer (reduced film) whose outer radius is presented in the form of a function of the Nu-criterion and the drop radius. Combustion and transfer processes are considered as quasi-stationary, and the physical constants as independent of the temperature and the local misture composition. Boundary conditions were used on the drop surface and on the outer boundary of the reduced film. The evaporation rate of the drops was sought for. Solutions were obtained for the evaporation rate and the temperature field in the extreme cases: evaporation

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The conditions of steady combustion ...

without combustion and diffusion combustion. Moreover, solutions were obtained by the numerical method on a computer. It was found that at certain combinations of parameters entering the equations, 3 solutions are possible. If all the solutions are possible, the drop does not ignite, but being lit, burns steadily. In other cases only one solution is possible - either self-ignition or evaporation (the ignited drop is extinguished). The authors investigated a condition for the existence of the equation solution under which combustion is steady. The evaporation rate of the hot drop depends to a small extent on the rate of chemical reaction, while the maximum temperature essentially differs from the temperature in the diffusion combustion zone. Moreover, a considerable part of the vapors moves beyond the boundaries of the reduced film without being burnt. Tests were carried out to measure the completeness of combustion of fine falling gasoline drops and larger drops on a quartz suspender. It was found that a remarkably incomplete combustion process takes place even if the drop is fully seized by the flame. The incompleteness of combustion rapidly grows when the flame extinction conditions are approached, e. g. for drops of an initial diameter of 1.8 mm at a flow velocity of 0.25 m/sec the incompleteness of combustion amounts to 7%, while at a velocity of 0.34 m/sec it is some 30%. Tests to determine the flame blow-off velocity showed that this velocity grows with an increase in temperature, oxygen content

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25739
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The conditions of steady combustion ...

in the flow and initial drop size, and depends on the blowing direction. For gasoline drops 1.8 mm in diameter in the air at room temperature this velocity was: with vertical upward blowing - 0.4 m/sec; with horizontal blowing - 0.5 m/sec, and with vertical downward blowing - 0.8 m/sec. Moreover, tests were carried out to study the effect of temperature pulsations on the evaporation rate of burning and non-burning drops, proving the insignificant effect of this factor. There are 4 figures and 7 references.

Sh. M. S.

[Abstracter's note: Complete translation]

Card 3/3

S/0170/64/000/001/0104/0109

ACCESSION NR: AP4011540

AUTHOR: Gurevich, M. A.; Sotnichenko, B. I.

TITLE: Critical thermal conditions in combustion

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 1, 1964, 104-109

TOPIC TAGS: solid fuel combustion, critical combustion condition

ABSTRACT: Certain general features of critical thermal conditions in an exothermic reaction in a plane layer with boundary conditions of the first order are examined. These features are important in problems of rapid transitions of ignition and extinction involving sudden jumps from low to high temperatures and back. It is shown that 1) a critical condition necessarily requires a maximum temperature within the layer; 2) a critical condition is impossible if heat yield decreases with increasing temperature or if it is independent of temperature; 3) if the heat yield depends on temperature as T^n, a critical condition is impossible if the exponent $n < 1$; and 4) the well-known Zel'dovich postulate (according to which ignition occurs on a high-temperature surface of a layer when there is no heat transfer) is invalid for any function of heat yield even as an asymptotic approximation. Orig. art. has 1 fig.

Card 1/2

ACCESSION NR: AP4011540

ASSOCIATION: Politekhnicheskiy institute im. M. I. Kalinina, Leningrad (Leningrad Polytechnic Institute)

SUBMITTED: 07Jun63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH, AI NO REF SOV: 005 OTHER: 003

Card 2/2

GUREVICH, M. A.; SOTNICHENKO, B. I.

"The critical regime and stability of the thermal-combustion regime; first-kind boundary conditions."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

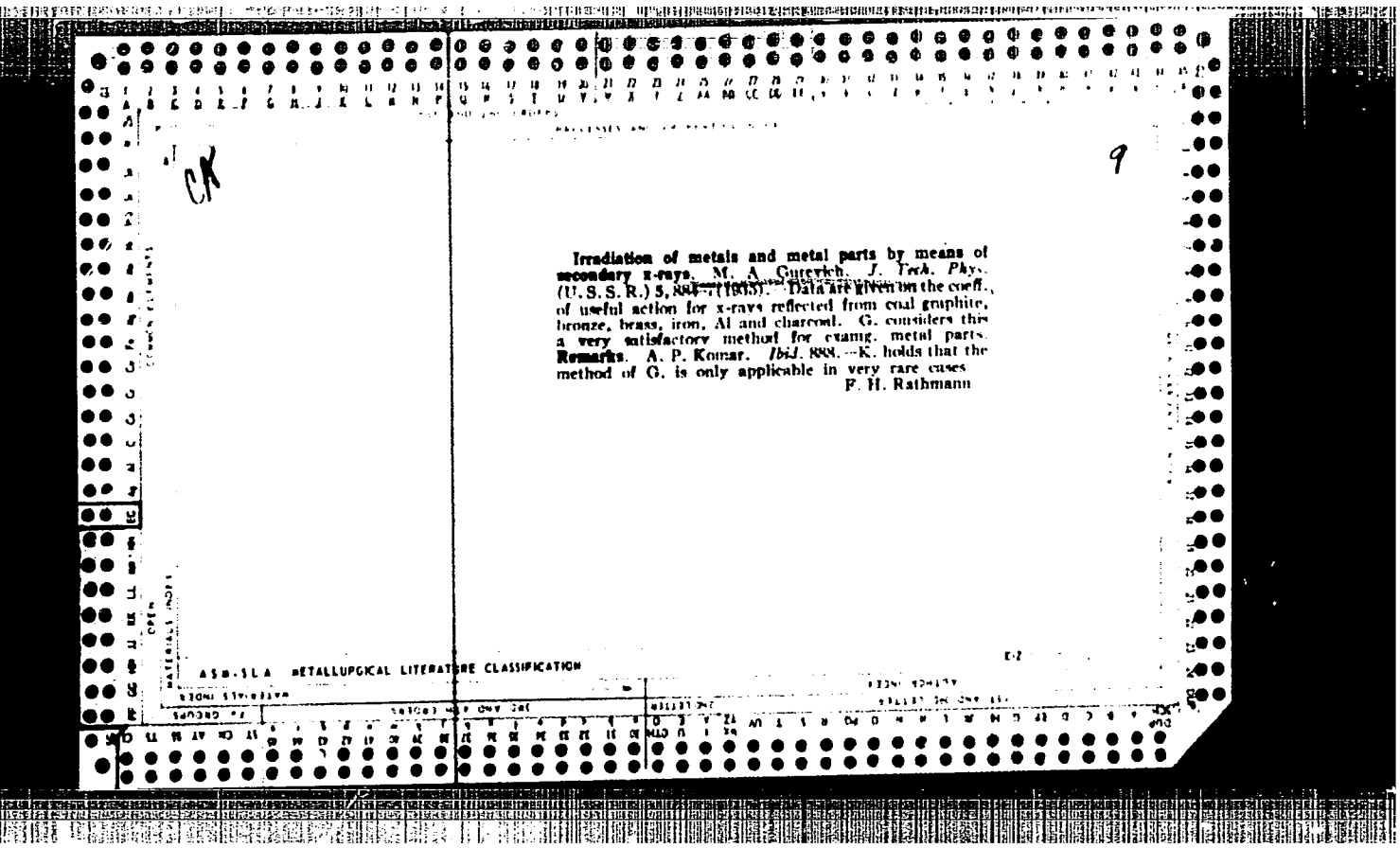
Leningrad Polytechnic Inst.

GUREVICH, M.A., kand.med.nauk; MAGNATAYEV, N.V.

Intravital diagnosis of a rupture of dissecting aneurysm of the thoracic aorta. Sov. med. 28 no.3:94-96 Mr '65.

(MIRA 18:10)

1. Pervaya terapevticheskaya klinika (zav. - prof. M.G.Malkina) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F.Vladimirskogo (direktor - kand.med.nauk P.M. Leonenko) i Lyubovitskaya gorodskaya bol'nitsa.

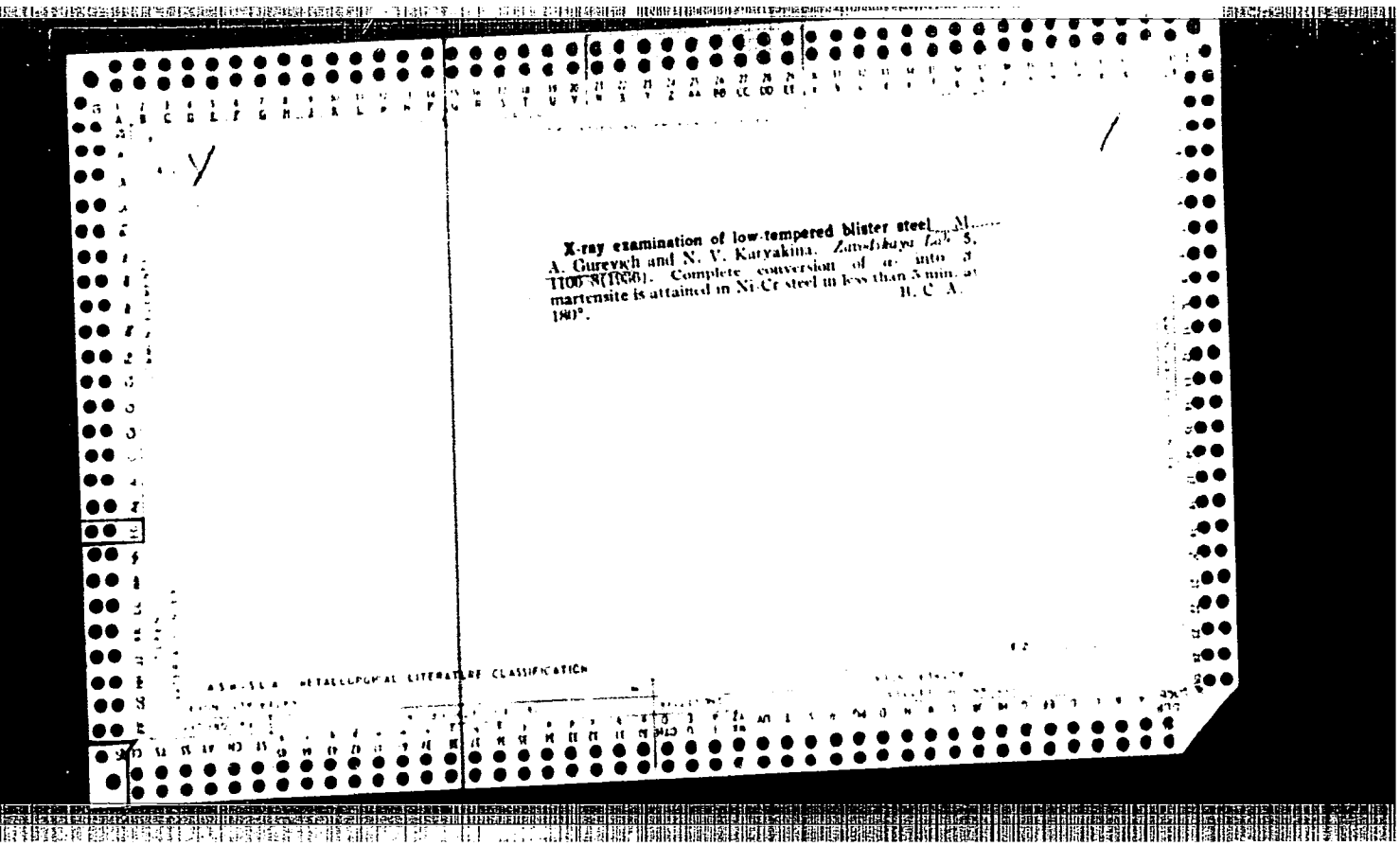


CK

9

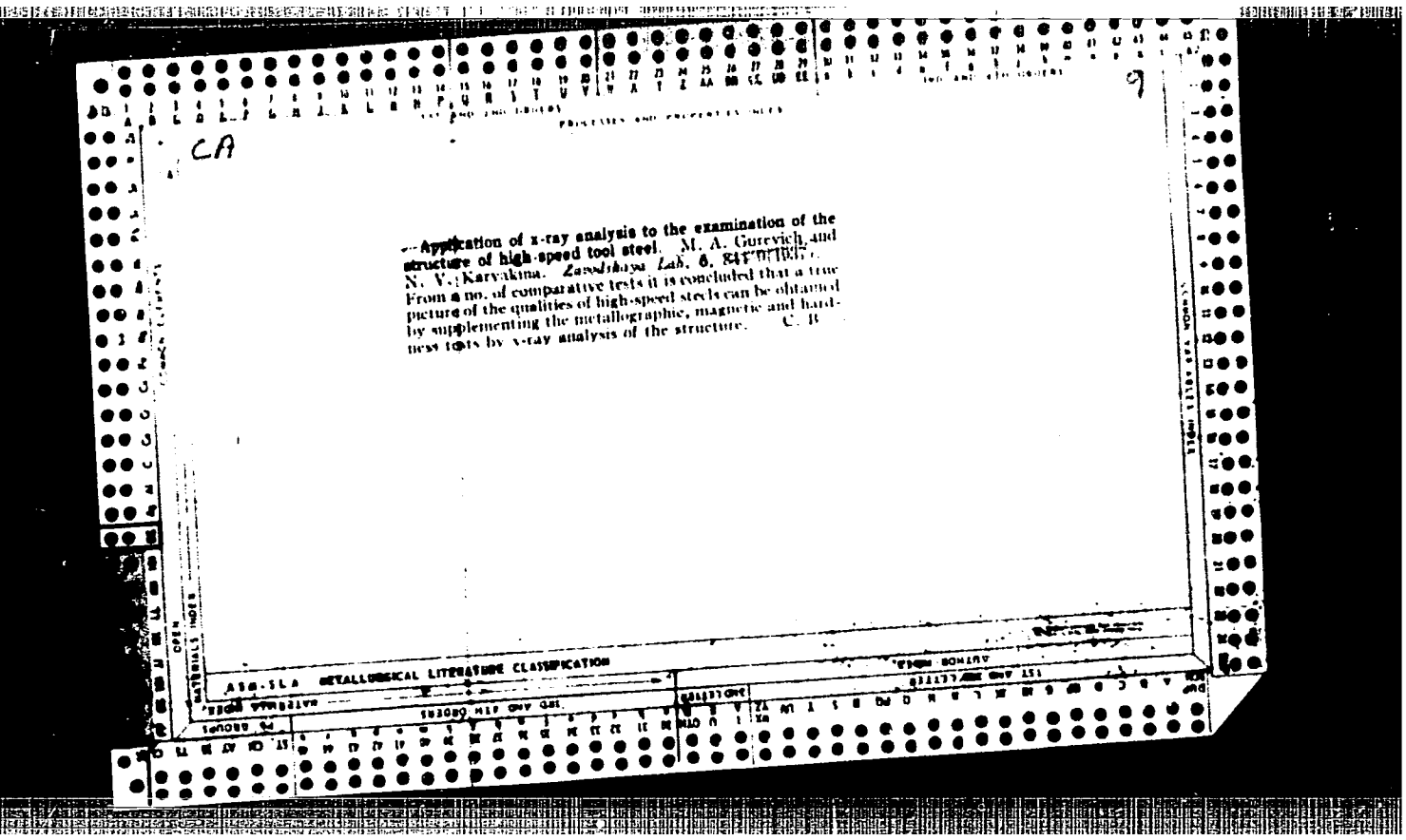
Irradiation of metals and metal parts by means of secondary x-rays. M. A. Gurevich. *J. Tech. Phys.* (U. S. S. R.) 5, 884–7 (1935). Data are given on the coeff. of useful action for x-rays reflected from coal graphite, bronze, brass, iron, Al and charcoal. G. considers this a very satisfactory method for examg. metal parts. **Remarks.** A. P. Komar. *Ibid.* 888.—K. holds that the method of G. is only applicable in very rare cases
F. H. Rathmann

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



X-ray examination of low-tempered blister steel. M. A. Gurevich and N. V. Karyakina. *Zavodskaya Lab.* 5, 1100-8(1936). Complete conversion of austenite to martensite is attained in Ni-Cr steel in less than 5 min. at 180°. B. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

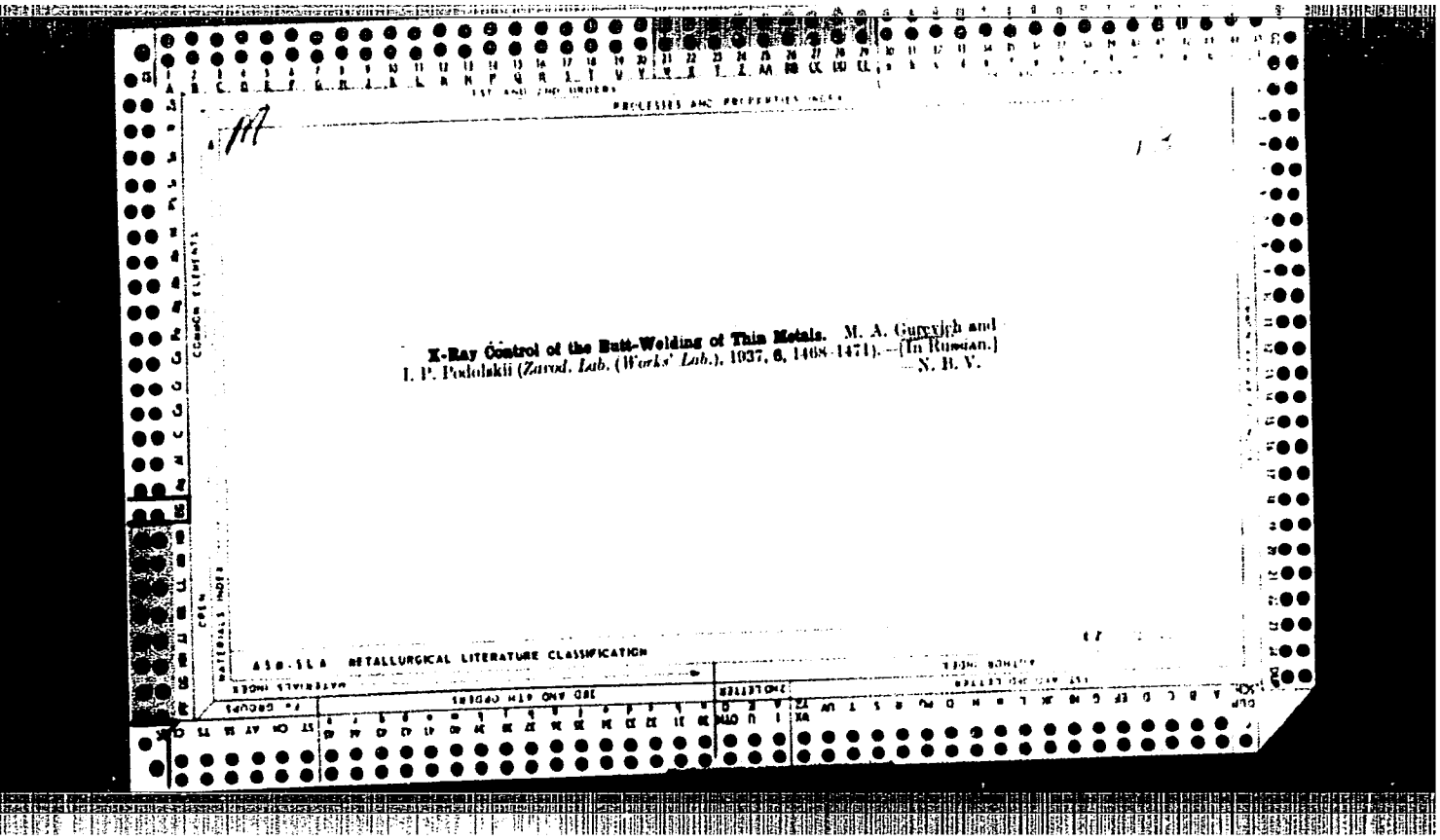


CA

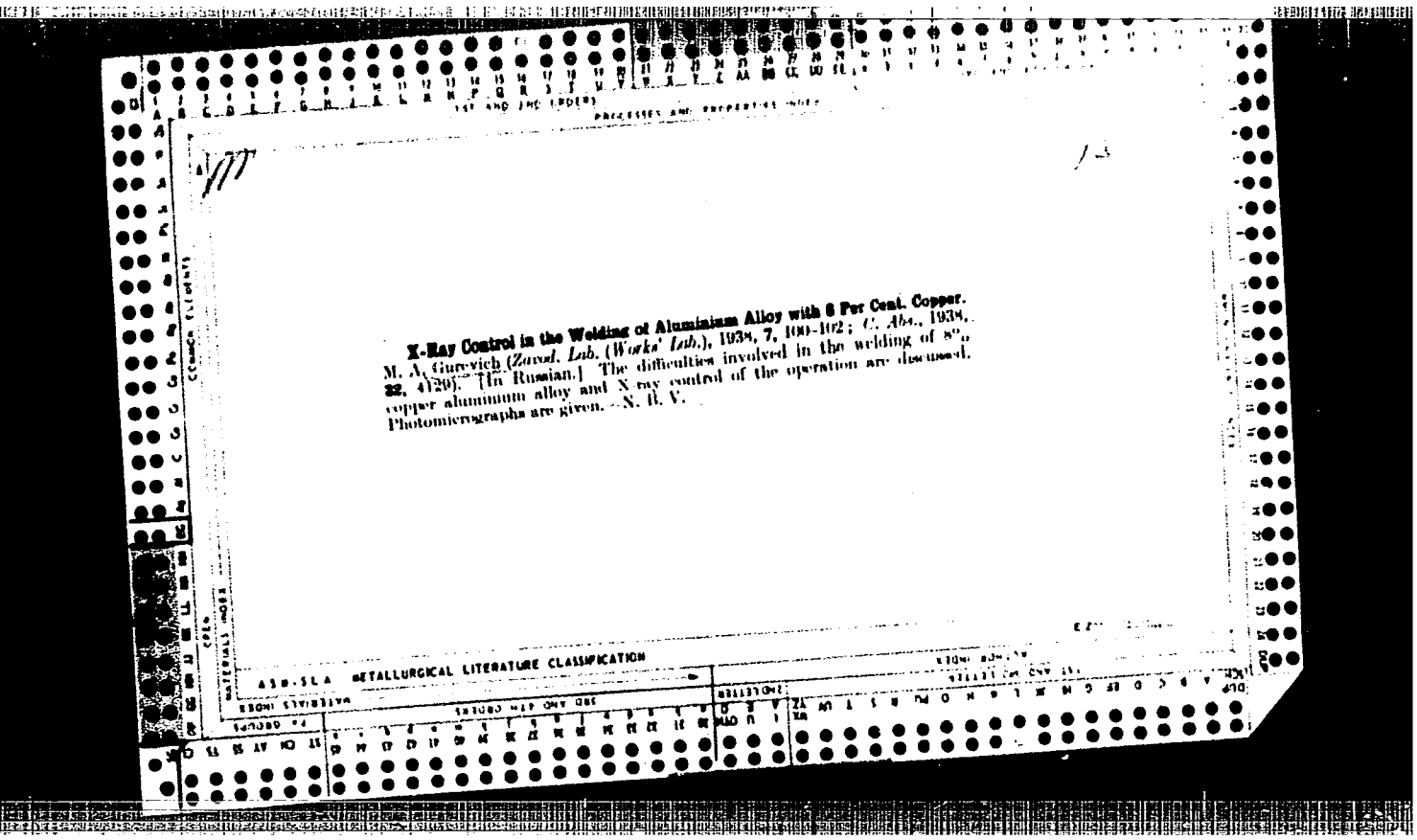
9

Application of x-ray analysis to the examination of the structure of high-speed tool steel. M. A. Gurevich, and N. V. Karyakina. *Zavodskaya Lab.* 6, 841[illegible]. From a no. of comparative tests it is concluded that a true picture of the qualities of high-speed steels can be obtained by supplementing the metallographic, magnetic and hardness tests by x-ray analysis of the structure. C. B

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



X-Ray Control of the Butt-Welding of Thin Metals. M. A. Gurevich and I. P. Podolskii (*Zavod. Lab.* (*Works' Lab.*), 1937, **6**, 1468–1471).—[In Russian.] N. B. V.



X-Ray Control in the Welding of Aluminium Alloy with 6 Per Cent. Copper.

M. A. Gurevich (*Zavod. Lab.* (*Works' Lab.*), 1938, 7, 100–102; *C. Abs.*, 1938, **32**, 4120).—[In Russian.] The difficulties involved in the welding of 6% copper aluminium alloy and X-ray control of the operation are discussed. Photomicrographs are given.—N. H. V.

GUREVICH, M.A.

USSR

The role of the volume reaction in the oxidation of carbon. M. A. Gurevich and I. I. Paleev. *Zhur. Tekh. Fiz.* 23, 1000-10(1953).—Math. The oxidation of C was shown to cover 3 separate regions of reaction each having its own characteristic rate const. The effect of particle size on this const. was detd. J. Bovtar Leach

GUREVICH, M.A.

Maximum effective constants of the rate of combustion of carbon particles. M. A. Gurevich, *Zhur. Tekh. Fiz.* 23, 1971–6(1953); cf. *C.A.* 49, 13005i.—Expts. show that the curve of the dependence of the rate const. for the combustion of C particles on particle size goes through a max. Radiation effects displace, but do not cause, the max. which owes its origin to the dependence of the particle temp. on its size. The reaction vol. does not exert any large influence on the position of the max. and cannot lead to the formation of a 2nd max. in the range of very fine particles. Conclusions are drawn from the fit of exptl. data to equations derived for various explanations. Charles M. Selwitz

GUREVICH, M. A.

USSR/Chemistry

Card : 1/1

Authors : Gurevich, M. A. and Ormont, B. F.

Title : Formation of carbide phases of vanadium

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1165 - 1168, June 1954

Abstract : Chemical and x-ry analyses revealed the following four phases of variable composition. 1) Alpha-phase consisting of vandium and possibly solid carbon solution in vanadium; 2) gamma-phase with orientating homogeneity boundaries with hexagonal lattice of dense packing; 3) delta-phase with orientating homogeneity boundaries but having a cubic face-centered lattice and 4) epsilon-phase with orientating homogeneity boundaries and cubic face-centered lattice with identicity period a = 4.150 kX. Seventeen references. Tables, graphs.

Institution : The L. Ya. Karpov Scient-Research Physico-Chem. Institute

Presented by : Academician V. A. Kargin, February 18, 1954

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617420007-4"

GUREVICH, M. A.

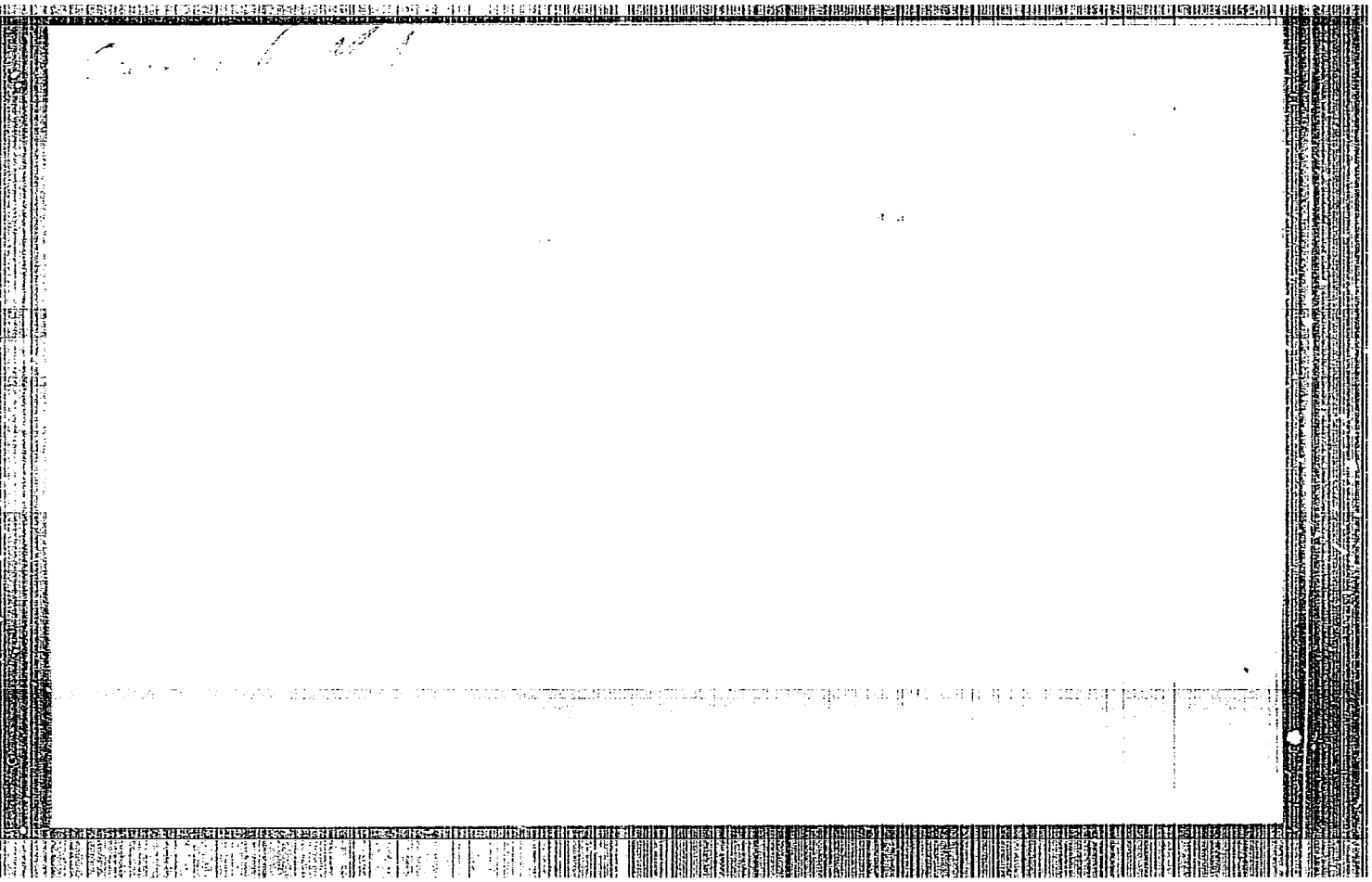
GUREVICH, M. A. -- "Investigation of the Structure and Limits of Phase Homogeneity in the Vanadium-Carbon (-Oxygen) System." Min Chemical Industry USSR. Order of Labor Red Banner Sci Res Physicochemical Inst imeni L. Ya. Karpov. Moscow, 1955. (Dissertation for the Degree of Candidate of Chemical Sciences.)

SO: Knizhnaya Letopis', No 5, Moscow, Feb 1956

GUREVICH, M.A.; KUTSEV, V.S.; ORMONT, B.F.; SMIRNOVA, V.I.; EPEL'BAUM, V.A.

Variable-composition phases in the chemistry of carbides. Zhur.neorg.khim. 1 no.7:1578 Jl '56. (MLRA 9:11)

(Carbides)



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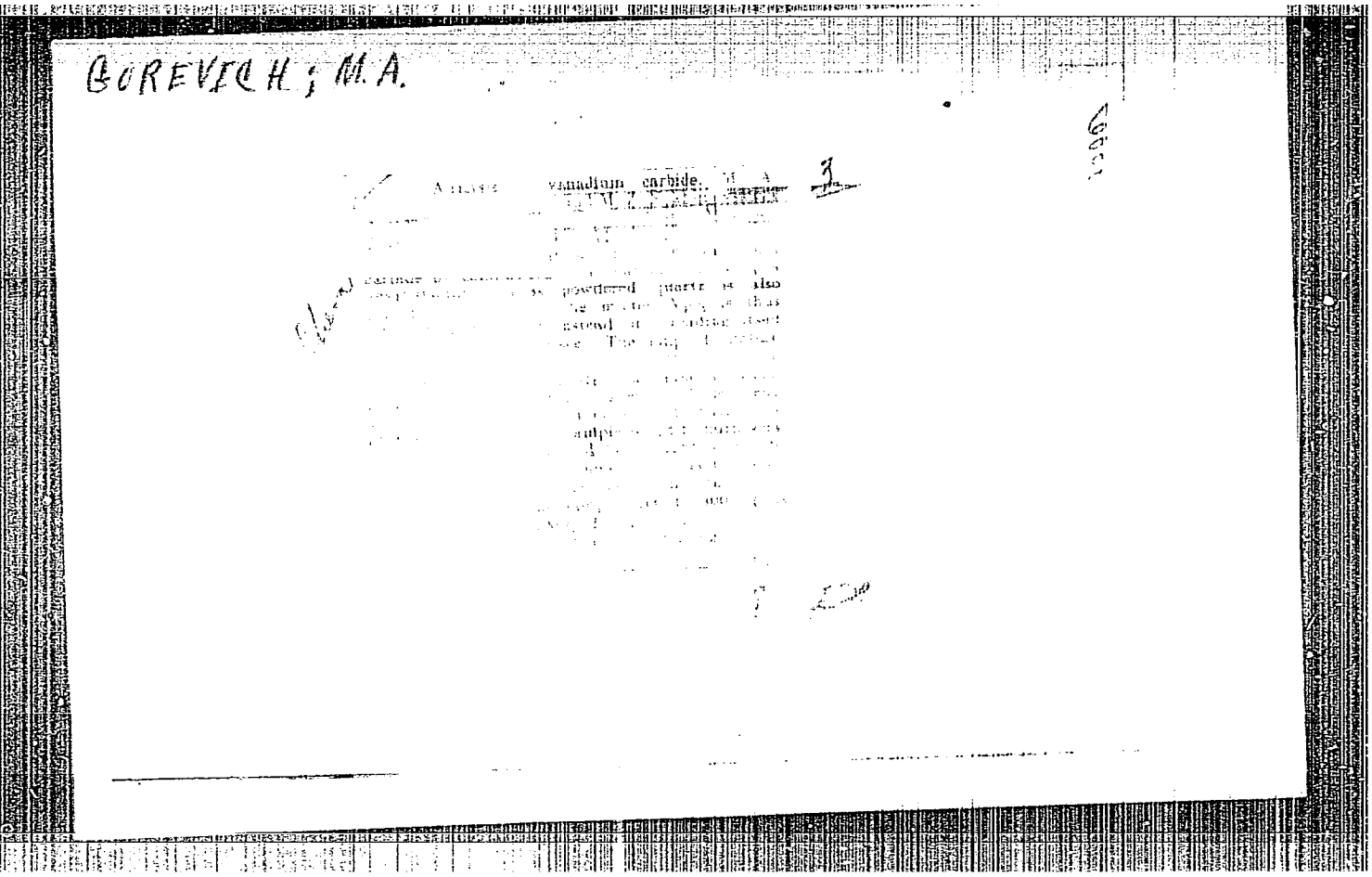


GUREVICH, M.A.

Category : USSR/Solid State Physics - Structural Crystallography E-3

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6520

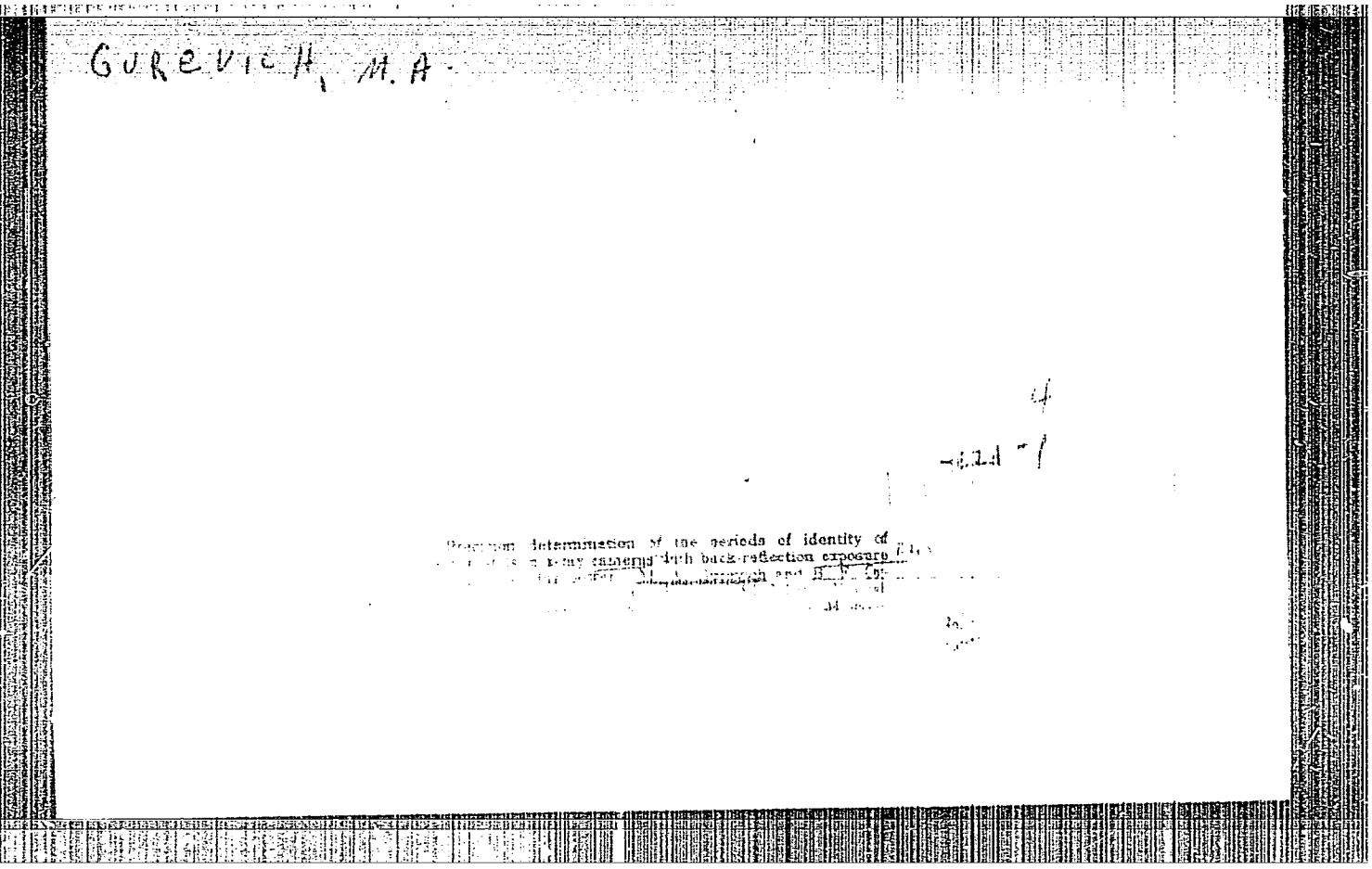
Author : Gurevich, M.A., Ormont, B.F.
Title : Precision Determination of the Identity Periods of Polycrystals with a Back-Reflection X-ray Camera of High Resolving Power

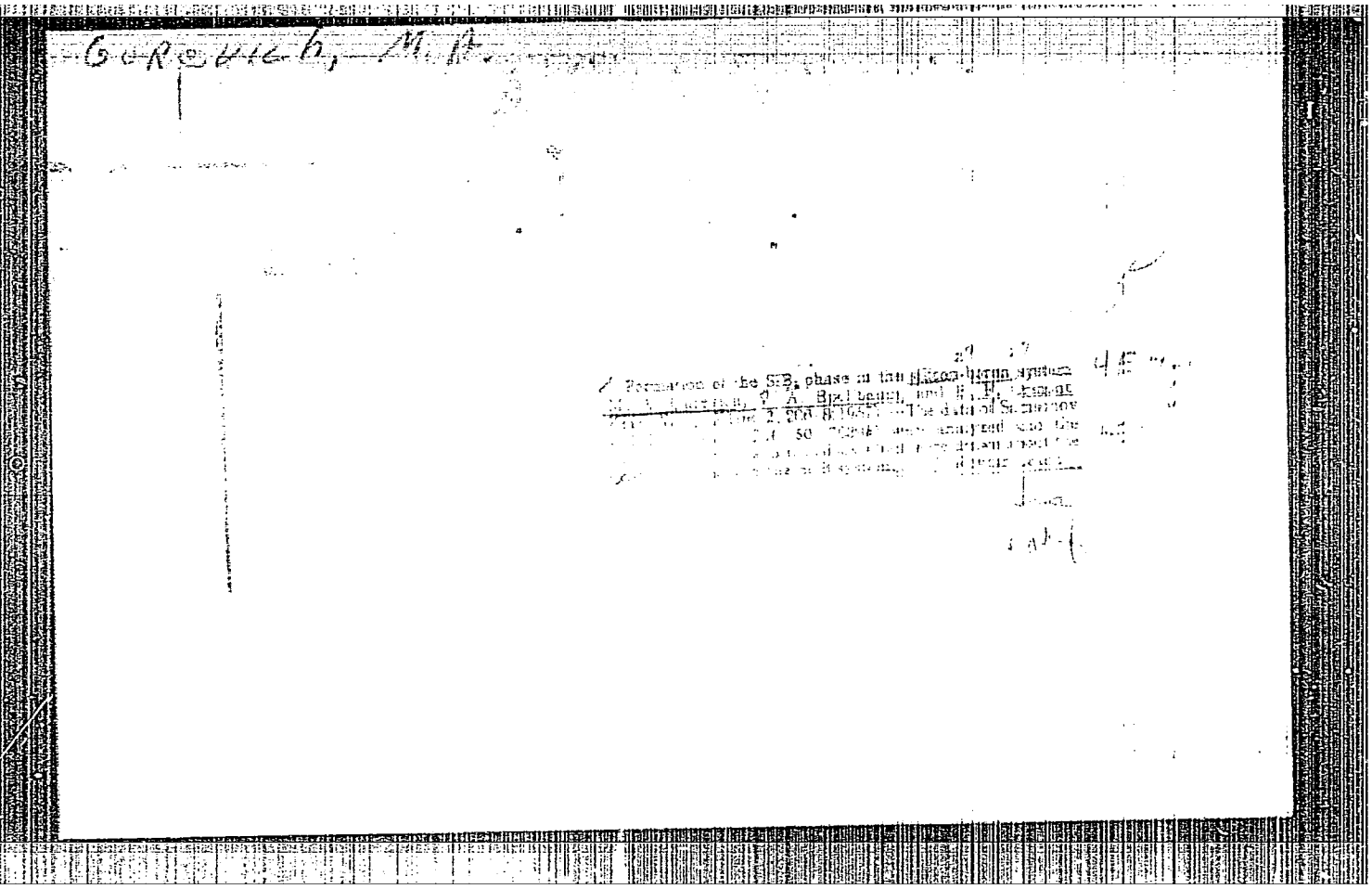
Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 5, 1106-1112

Abstract : The authors discuss the problem of the use of focusing methods, particularly the use of back-reflection X-ray photography with high resolution cameras, for precision determination of the identity periods of a lattice of real polycrystalline substances. The advantages and shortcomings of the X-ray cameras with a variable radius up to 1 meter, constructed by A.Z. Zhmudskiy for back-reflection X-ray photography (Zavod. laboratoriya, 1949, No 9) are considered. A modernized design of the A.Z. Zhmudskiy camera has been developed, with thermostatic control of the specimen and with a focusing slit 5.5 mm wide and 0.8 mm high; this gives a considerable reduction in the width of the line on the X-ray photographs.

Card : 1/2

Card : 2/2





GUREVICH, M.A.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Phisical-Chemical Analysis, Phase Transitions. B-8

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3793.

Author : M.A. Gurevich, B.F. Ormont.
Inst :
Title : Study of Phase Composition and Phase Homogeneity Limits of Vanadium - Carbon - Oxygen System. I. Vanadium-Carbon System.

Orig Pub: Zh. neorgan. khimii, 1957, 2, No 7, 1566-1580.

Abstract: The V - C system was investigated roentgenographically and by chemical methods in the composition range from V to VC and in the temperature range from 980 to 2300°. Following phases form in the system α-phase: (V and, possibly, solid solution of C in V, under 1 at. % of C): the nuclei are bodycentered cubic with an identity period a about 3.018 A; γ-phase with homogeneity limits from $VC_{0.41}$ to $VC_{0.5?}$, hexagonal lattice with parameters within following limits: a - from 2.870 to 2.894,

Card : 1/2 -32-

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions. B-8

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3793.

c - from 4.546 to 4.572 A, c/a - from 1.584 to 1.580 depending on the composition; δ-phase with homogeneity limits from $VC_{0.60}$ to $VC_{0.63}$, face-centered cubic lattice, a from 4.113 to 4.130 A; ε-phase with homogeneity limits from $VC_{0.63}$ to VC, face-centered cubic lattice, a from 4.150 to 4.160 A. X-ray pictures of specimens and a schematic system graph are given. The data of microhardness experiments indicate a great hardness of the ε-phase (up to 3000 kg per sq. mm). The polishing capacity of V carbide phases is near that of SiC.

Card : 2/2 -33-

GUREVICH M.A.

KPEL'BAUM, V.A.; SEVAST'YANOV, N.G.; GUREVICH, M.A.; ORMONT, B.F.; ZHDANOV, G.S.

Phases formed in the system chromium -- boron. Part 1: Formation of "β-chromium" under the influence of small additions of boron. (MIRA 11:3)
Zhur. neorg. khim. 2 no.8:1848-1854 Ag '57.
(Chromium) (Boron)

GUREVICH, M.A.; ORMONT, B.F.

Investigating the composition, structure, and homogeneity of phases in the system vanadium -- carbon --oxygen. Part 2: Investigating the system vanadium -- oxygen (lower oxides of vanadium). Zhur. neorg. khim. 2 no.11:2581-2588 N '57. (MIRA 11:3)

(Vanadium oxides)

Gurevich, M.A.

116

AUTHOR: Gurevich, M.A. and Ormont, B.F.

TITLE: Period of identity of the lattice of pure metallic vanadium and the influence of oxygen on the change of this period. (Period identichnosti reshetki chistogo metallicheskogo vanadiya i vliyanie kisloroda na izmenenie perioda.)

PERIODICAL: "Fizika Metallov i Metallovedenie" (Physics of Metals and Metallurgy), 1957, Vol.IV, No.1 (10), pp.112-114, (U.S.S.R.)

ABSTRACT: The authors carried out X-ray investigations of metallic specimens produced by various methods, i.e. by reduction with calcium from vanadium oxides, by the alumo-thermal method, etc. The X-ray exposures were obtained by an asymmetrical method in chambers of 114 mm dia. using CrK_{α} - radiation. Since the authors used in their experiments metallic vanadium produced from very pure raw materials, the main possible contamination of the product obtained can be only oxygen. The authors considered determination of the dependence of the change in the period of identity of vanadium on the quantity of oxygen dissolved in it of great interest since it may provide a possibility of determining the oxygen content in vanadium by X-ray methods. 2 tables, 13 references, one of which is Russian.

Physical Chemistry Research Institute, imeni L. Ya. Karpov.

Recd. Feb.4, 1956.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000617420007-4"

GUR EVICH, M.A.

5104 27 27 18

STUDIES OF ZIRCONIUM–BORON PHASE DIAGRAM. I. ON THE FORMATION OF SOLID SOLUTION OF BORON IN ZIRCONIUM. V. A. Epel'baum and M. A. Gurevich (Karpov Moscow Physico-Chemical Inst.). Zhur. Tekh. Fiz. 31, 708-11(1957) Mar. (In Russian)

Investigations revealed that in Zr–B system zirconium dissolves up to 2 at.% of boron with a change in lattice parameters from a = 3.232 A, C = 5.140 A, c/a = 1.590 to a = 3.259 A, C = 5.191 A, c/a = 1.594. (tr-auth)

GUREVICH, M. A.

129-1-2/14

AUTHORS: Gurevich, M.A., Candidate of Chemical Sciences, and Ormont, B.F., Doctor of Chemical Sciences.

TITLE: X-ray Investigations of Binary Vanadium-Tungsten Carbides (Rentgenograficheskoye issledovaniye dvoynykh vanadiy-vol'framovykh karbidov)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.1, pp. 7 - 10 (USSR).

ABSTRACT: The first part of the paper contains a review of the work of other authors in this field, mentioning that published data on the phase composition and the location of boundaries of solubility of the system VC-WC are scarce and contradictory. Therefore, the authors considered it advisable to investigate this system more accurately by applying X-ray phase analysis. As starting material for the specimens, metallic vanadium of 98% purity with a lattice period a = 3.024 kX was used and also the oxide V_2O_3 obtained during thermal decomposition of spectrally-pure NH_4VO_3 and hydrogen-saturated, highly-disperse pulverised tungsten with an identity period a = 4.156 kX. The synthesis of the pressed rods was

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X-ray Investigations of Binary Vanadium-Tungsten Carbides.

effected at 1 800 and 2 200 °C in vacuum as well as in a hydrogen atmosphere. In Fig.2, the changes in the lattice identity period of VC as a function of the WC content are graphed. In Fig.3, the X-ray pictures are reproduced of a synthesised specimen before and after repeated heating. It is shown that at 1 300 - 1 800 °C, the cubic carbide VC dissolves about 10 mol% of the hexagonal carbide WC; at 2 150 to 2 200 °C, the vanadium carbide dissolves over 50mol% of the WC, whereby a single-phase VC-based system forms a continuous series of solid solutions with continuously-changing identity periods between 4.16 and 4.21 kX along a very steep curve. The identity period c of the lattice of the phase WC decreases by 3 to 4 units in the third digit after the decimal point as compared to pure WC; this is probably attributed to the fact that the solubility of the cubic carbide VC in the hexagonal carbide WC is very small. There are 3 figures and 8 references, 6 of which are Slavic.

ASSOCIATION: Institute of Physico-Chemistry imeni L.Ya. Karpov (Fiziko-khimicheskiy Institut imeni L.Ya. Karpova)

AVAILABLE: Library of Congress.

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GUREVICH, M. A.

78-2-22/43

AUTHORS: Gurevich, M. A., Ormont, B. F.

TITLE: Investigations on the Phase-Composition, Structure and Boundaries of Homogeneous Phases in the System Vanadium-Carbon-Oxygen (Issledovaniye fazovogo sostava, stroyeniya i granits gomogennosti faz sistemy vanadiy-uglerod-kislorod) III. The Radiographic Investigation of the System V-C-O (III. Rentgenograficheskoye issledovaniye v sisteme V-C-O)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 2, pp. 403-412 (USSR)

ABSTRACT: The phase composition of the system V-C-O and the occurring crystalline phases were investigated. The synthesis was performed under the influence of V_2O_3 and metallic vanadium with carbon in three temperature intervals (980-1270° C, 1300-1620° C, 1800-2300° C). In the temperature interval of 980-1270° C no formation of vanadium-carbide occurs, but at a temperature of 1000° C only carboxy-vanadium. In the second temperature interval from 1300 to 1620° C no V_2O_3 was observed. In this temperature range only the δ-phase forms. In the third temperature range from 1800-2300° C the γ, δ, ε-phases occur. With an increase in the content of carbon the compounds

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Investigations on the Phase-Composition, Structure and Boundaries 78-2-22/43
of Homogeneous Phases in the System Vanadium-Carbon-Oxygen.
III. The Radiographic Investigation of the System V-C-O

VC, $VC_{1,2}$, $VC_{1,5}$ and $VC_{1,8}$ form. Summarizing, the following phases form in these temperature ranges:

β-phase - cubic lattice with $VO_{0,6} \cdot C_{0,1}$ to $VC_{0,7} \cdot C_{0,7}$

γ-phase - hexagonal lattice with $VC_{0,33} \cdot O_{0,09}$ and $VC_{0,30} \cdot O_{0,13}$

δ-phase - cubic face-centered lattice with a C-content of 13% (14%)

ϵ-phase - cubic face-centered lattice of the type NaCl with a C-content of 18-19%.

The results showed that the system V-C-O has interesting phases. For the production of vanadium carbide the syntheses from metallic vanadium metal and carbon is recommended. There are 5 figures, 5 tables, and 6 references, 2 of which are Slavic.

SUBMITTED: April 4, 1957
AVAILABLE: Library of Congress

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SOV/78-3-11-19/23

AUTHORS: Epel'baum, V. A., Sevast'yanov, N. G., Gurevich, M. A., Ormont, B. F., Zhdanov, G. S.

TITLE: II. On the Phases Formed in the System Chromium-Boron (II. O fazakh, obrazuyushchikhsya v sisteme khrom-bor)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2545-2552 (USSR)

ABSTRACT: The compounds formed in the system chromium-boron are investigated. The investigations were carried out by means of chemical, radiographic, and metallographic methods in the region of the phase diagram of the system chromium-boron and in the range $CrB_{0,35}$-CrB_3. Purest boron (99,6%) produced by the thermal dissociation of diboranes served as initial components for the production of the chromium-boron phases. The results of the chemical and radiographic analyses of the samples were obtained by heating at 1150°C in vacuum and then at 1300°C in an argon atmosphere for 36 hours. The results are given in table 2. It was found that the γ-phase occurs with a rhombic lattice in the sample with a boron content of $CrB_{0,35}$-$CrB_{0,58}$. In the samples

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II. On the Phases Formed in the System Chromium-Boron

with a boron content of $CrB_{0,41}$-$CrB_{0,51}$ only the γ-phase exists. In the samples with a boron content of $CrB_{0,55}$-$CrB_{1,05}$ the δ-phase (Cr_5B_3-phase) is formed. In the samples with a boron content of $CrB_{0,59}$-$CrB_{0,63}$ only the δ-phase is formed. In the samples with a boron content of $CrB_{0,68}$-$CrB_{1,50}$ the ε-phase occurs (CrB with rhombic lattice). In the samples of the composition $CrB_{0,96}$-$CrB_{1,13}$ no other phases were found besides the ε-phase. In the sample with a boron content of $CrB_{1,20}$-$CrB_{1,90}$ a ζ-phase with rhombic lattice is formed. In the sample of the composition $CrB_{1,50}$-$CrB_{1,65}$ no other phases were found to exist besides the ζ-phase. In the samples with $CrB_{1,70}$ and $CrB_{1,90}$ only the η-phase is formed.

There are 2 figures, 5 tables, and 27 references, 1 of which is Soviet.

5(4), 18(7)

AUTHORS: Epel'baum, V. A., Gurevich, M. A. SOV/76-32-10-8/39

TITLE: Investigation of the Phase Diagram of the System Zirconium - Boron (K issledovaniyu fazovoy diagrammy sistemy tsirkoniy-bor) II. On the Formation of the Phase as Dependent Upon the Composition of ZrB_2 (II. Ob obrazovanii fazy, otvechayushchey sostavu ZrB_2)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 10, pp 2274-2281 (USSR)

ABSTRACT: Among the papers published in this field those by the following authors are mentioned and commented on: Tucker and Moody (Tuker, Mudi) (Ref 1), Wedekind (Vedekind) (Ref 2), Andrieux (Endro) (Ref 3), Moiers (Moyyers) (Ref 4), McKenna (Mak-Kenna) (Ref 5), Norton, Blumental and Sindeband (Blyumental', Zindeband) (Ref 6), Kiessling (Kissling) (Refs 7,8), Brewer, Sawzer, Templeton and Dauben (Bryuyer, Sauzer, Templton and Daubin) (Ref 9), Kieffer, Benešovsky and Honak (Kiffer, Benesovski and Khonak) (Ref 10), G. A. Meyerson and G. V. Samsonov (Ref 11), as well as Post and Glaser (Glazer) (Refs 12-14). A zirconium of 99,6% (Zr 99,6%, Fe 0,07%, Ca 17%, Cl 0,001%) and boron

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Investigation of the Phase Diagram of the System Zirconium - Boron. II. On the Formation of the Phase as Dependent Upon the Composition of ZrB_2

(purity 99,3-99,5%) were used in the present experiments. The optimal sintering conditions are at 1900-2100°C and for a duration of 2-3 hours. The syntheses were carried out in a tungsten heater and in an argon atmosphere purified from humidity and oxygen, or in vacuum (10^{-3} mm Hg). The temperature measurements were carried out by means of the optical pyrometer "Ribo". M. I. Starostina and I. A. Pryanishnikova took part in the analyses. The composition of the α-phase is $ZrB_{0,02}$ to $ZrB_{2,68}$. This phase represents a solid solution of boron (up to 2 atom%) in hexagonal α-zirconium with the lattice triodes becoming greater. The ZrB_2 phase also has a hexagonal lattice and is already formed at $ZrB_{0,02-0,03}$. The ZrB_2 phase is present from the composition $ZrB_{1,7}$ to $ZrB_{2,68}$ without any visible impurities of other boride phases of zirconium. The lattice periods of the phase ZrB_2 remain constant within the range of experimental error (Ref 15) ($\pm$ 0,001 kX) and amount to $a = 3,162_5 \pm 0,0003$ kX, $c = 3,522_5 \pm 0,0003$ kX, $c/a = 1,113_8$.

SOV/76-32-10-8/39

Investigation of the Phase Diagram of the System Zirconium - Boron. II. On the Formation of the Phase as Dependent Upon the Composition of ZrB_2

Investigations carried out by an elutriation of $ZrB_{2,68}$ in methylene iodide did not make possible a clear determination of whether this phase had a constant or variable composition. Data are given in tables and radiograms. Finally, the authors thank Professor B. F. Ormont. There are 1 figure, 3 tables, and 16 references, 3 of which are Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva (Moscow, Physical-Chemical Institute imeni L. Ya. Karpov)

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SOV/78-4-6-31/44

18(6)

AUTHORS: Epel'baum, V. A., Gurevich, M. A., Ormont, B. F.

TITLE: On the Nature of the α- and β-phase Which Are Formed in the System Boron-carbon (O prirode α- i β-faz, obrazuyushchikhsya v sisteme bor-uglerod)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 6, pp 1398 - 1403 (USSR)

ABSTRACT: The conditions for the formation of the α- and β-phase in the system boron-carbon were investigated. Boron with a purity of 99.6% produced by the thermal dissociation of borane and carbon of a purity of 99.8% were used as initial products. The alloy was produced either in an argon atmosphere or in vacuum 10^{-3} torr at 1900 - 2200°, and in vacuum 10^{-3} torr at 1150°, then stored for 10 hours at this temperature, and then stored 21 hours in an argon atmosphere at 1350°. Then the alloy was again heated and stored for three hours at 2300°. Table 1 shows the results of the chemical- and X-ray phase analyses of several preparations which were produced from purest initial products and purest boron anhydride. The X-ray phase analysis showed that beside the line of the initial

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boron nitride also intensive lines of the α- and β-phase occur in the products. The α-phase is coarse-grained, the β-phase fine-grained. The influence of the thermal treatment of the boron carbide- B_4C - samples on the ratio of the α- and β-phase was investigated as well as the graphite phase (Table 2). The results showed that a change of the ratio in the lines of the α- and β-phase occurs in the case of the thermal treatment in a Tammann furnace after the hot press method and in the furnace TVV-2. A mutual transformation of the α- and β-phase takes place in the temperature range 1900 - 2200°. The lattices of the β-phase were more accurately determined and the average value a= 3.161±0.004 kX was detected. There are 2 tables and 5 references, 3 of which are Soviet.

SUBMITTED: March 27, 1958

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5(2) SOV/78-4-8-26/43

AUTHORS: Epel'baum, V. A., Gurevich, M. A., Starostina, M. I.

TITLE: On the Solubility of Boron in Silicon (O rastvorimosti bora v kremnii)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1881-1884 (USSR)

ABSTRACT: After a survey on the publication data dealing with this subject (Refs 1-14) the importance of the system mentioned in the title is pointed out since according to the publication data (Refs 5-7) the cermets which are produced from silicon and boron under the action of very high temperatures, are now industrially used. They are characterized by high strength, chemical stability, heat resistance, semiconductor properties, etc. The authors investigated the solubility of boron in silicon and its effect on the structure of the silicon crystal lattice. The composition of the samples was varied between 99Si : 1B and 1Si : 6B. The samples were melted at 1350° or 2100-2200°C in argon atmosphere and analysed by X-ray methods (X-ray camera RKU-86 and RKU-114, copper radiation λCuK_{α_1} = = 1.537396 kX). The lattice period of silicon decreasing with

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On the Solubility of Boron in Silicon

increasing boron content is shown by table 1 and graphically represented by using the data by F. Horn (Ref 14) and H. Nowotny (Ref 15) in figure 1. The behaviour of the solution of boron in silicon corresponds to the solid substitution solution. The strong contraction of the silicon lattice under the influence of relatively small boron amounts could not be explained. There are 1 figure, 1 table, and 17 references, 5 of which are Soviet.

SUBMITTED: April 26, 1958

EPEL'BAUM, V.A.; SEVAST'YANOV, N.G.; GUREVICH, M.A.; ZHDANOV, G.S.

Phases formed in the system chromium - boron in the region rich in boron. Zhur. strukt. khim. 1 no.1:64-65 My-Je '60.
(MIRA 13:8)

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni L.Ya.Karpova.
(Chromium) (Boron)

S/078/60/005/010/013/021
B004/B067

AUTHORS: Savitskaya, Ya. S., Gurevich, M. A., Kalabukhova, S. V., Sitnikova, S. I.

TITLE: The Problem of the Formation of Solid Solutions in the System Y_2O_3 - Sc_2O_3 by Means of Thermal Decomposition of the Isomorphously Coprecipitated Yttrium - Scandium Oxalate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 10, pp. 2300-2306

TEXT: In the introduction, the authors point out that the formation of solid solutions of oxides and rare earths by sintering directly mixtures of oxides has certain disadvantages (high temperatures, long duration of reaction). Hence, they studied the possibility of obtaining such solutions from coprecipitated oxalates:

$$(Y,Sc)_2(C_2O_4)_3 \cdot nH_2O \xrightarrow{t^\circ} (Y,Sc)_2O_3 + CO + CO_2 + nH_2O.$$

Y_2O_3 and Sc_2O_3

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The Problem of the Formation of Solid Solutions in the System Y_2O_3 - Sc_2O_3 by Means of Thermal Decomposition of the Isomorphously Coprecipitated Yttrium - Scandium Oxalate

S/078/60/005/010/013/021
B004/B067

were used as initial substances. By heating them to 1000°C, their impurities were removed (for analytical data see Table 1). They were dissolved in hydrochloric acid "pure pro analysi", evaporated, and 0.1 M solutions were obtained. Mixtures of these chlorides at a molar ratio (related to oxide) of Y_2O_3 : Sc_2O_3 from 1 : 1.64 to 4 : 1.64 were heated to 95°C and precipitated by means of chemically pure oxalic acid of the same temperature.(Table 2). The thermal decomposition curves of pure yttrium and scandium oxalates, as well as of the coprecipitated oxalate were taken (Fig. 1, Table 3). In contrast to the temperatures at which the mechanical mixtures of the pure oxalates start decomposing, the decomposition temperature of the coprecipitated oxalate was between the temperatures for pure oxalates. The pure oxalates and the coprecipitated oxalate were heated to 900°C, and their X-ray pictures were taken. The values for Y_2O_3 are given in Table 4. As may be seen from Table 5 and Fig. 2, a continuous series of solid solutions of the oxides is formed, with the lattice constant changing steadily from a = 10.61 kX (pure Y_2O_3)

The Problem of the Formation of Solid Solutions in the System Y_2O_3 - Sc_2O_3 by Means of Thermal Decomposition of the Isomorphously Coprecipitated Yttrium - Scandium Oxalate

S/078/60/005/010/013/021
B004/B067

to a = 9.85 kX (pure Sc_2O_3). There are 2 figures, 5 tables, and 20 non-Soviet references.

SUBMITTED: July 27, 1959

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